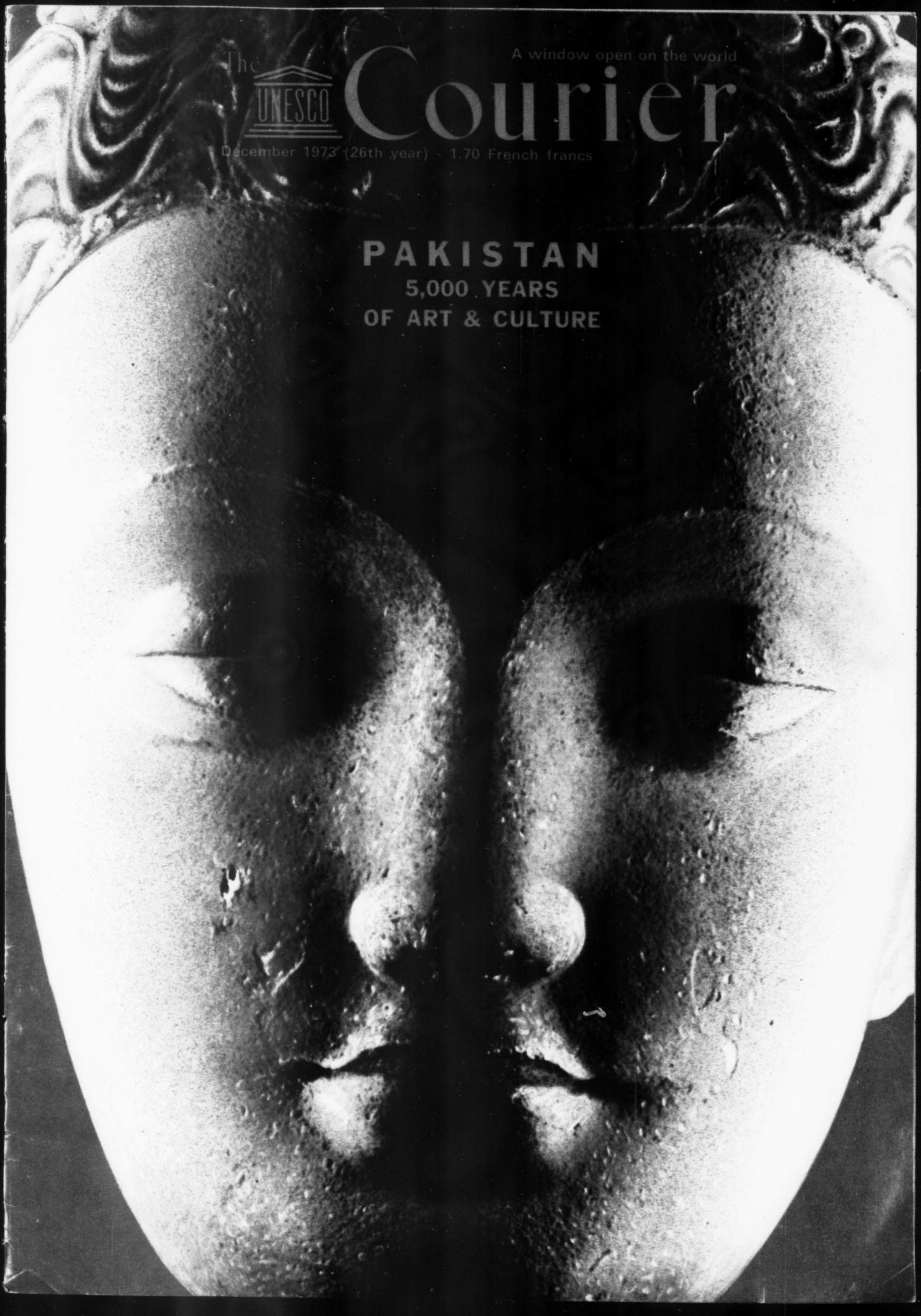
The UNESCO Courier

A window open on the world

December 1973 (26th year) - 1.70 French francs

PAKISTAN

5,000 YEARS OF ART & CULTURE



TREASURES OF WORLD ART

83

TURKEY

Young Hittite mother

Cradle of civilizations dating back to the dawn of history, Turkey boasts an illustrious array of art and monuments from its ancient past. Among these vestiges of antiquity are the works of craftsmen and sculptors of the Hittites whose art and culture developed about 4,000 years ago in central Anatolia and flowered during more than six centuries. The Hittite civilization was contemporary with those of Assyria and Phoenicia and also with that of the Indus valley at Moenjodaro and Harappa (see page 14). Its people mined copper, lead and silver and developed advanced techniques of metalworking. The skill of an Anatolian craftsman of 3,500 years ago is displayed in this little bronze statuette (7 cm. high).

Photo © Claude Gaspari, Aimé Maeght Collection

The UNESCO Courier

DECEMBER 1973
26TH YEAR

PUBLISHED IN 15 LANGUAGES

English	Arabic	Hebrew
French	Japanese	Persian
Spanish	Italian	Dutch
Russian	Hindi	Portuguese
German	Tamil	Turkish

Published monthly by UNESCO

The United Nations Educational, Scientific and Cultural Organization

Sales and Distribution Offices

Unesco, Place de Fontenoy, 75700 Paris

Annual subscription rate 17 French francs

★

The **UNESCO COURIER** is published monthly, except in August and September when it is bi-monthly (11 issues a year). For list of distributors see inside back cover.
Individual articles and photographs not copyrighted may be reprinted providing the credit line reads "Reprinted from the **UNESCO COURIER,**" plus date of issue, and three voucher copies are sent to the editor. Signed articles reprinted must bear author's name. Non-copyright photos will be supplied on request. Unsolicited manuscripts cannot be returned unless accompanied by an international reply coupon covering postage. Signed articles express the opinions of the authors and do not necessarily represent the opinions of UNESCO or those of the editors of the **UNESCO COURIER.**

The Unesco Courier is produced in microform (microfilm and/or microfiche) by : (1) University Microfilms (Xerox), Ann Arbor, Michigan 48100, U.S.A.; (2) N.C.R. Microcard Edition, Indian Head, Inc., III West 40th Street, New York, U.S.A.; (3) Bell and Howell C°., Old Mansfield Road, Wooster, Ohio 44691, U.S.A.

The Unesco Courier is indexed monthly in the Readers' Guide to Periodical Literature, published by H. W. Wilson Co., New York, and in Current Contents - Education, Philadelphia, U.S.A.

★

Editorial Office
Unesco, Place de Fontenoy, 75700 Paris - France

Editor-in-Chief
Sandy Koffler

Assistant Editor-in-Chief
René Caloz

Assistant to the Editor-in-Chief
Olga Rödel

Managing Editors
English Edition : Ronald Fenton (Paris)
French Edition : Jane Albert Hesse (Paris)
Spanish Edition : Francisco Fernández-Santos (Paris)
Russian Edition : Georgi Stetsenko (Paris)
German Edition : Werner Merkli (Berne)
Arabic Edition : Abdel Moneim El Sawi (Cairo)
Japanese Edition : Kazuo Akao (Tokyo)
Italian Edition : Maria Remiddi (Rome)
Hindi Edition : Ramesh Bakshi (Delhi)
Tamil Edition : N.D. Sundaravadivelu (Madras)
Hebrew Edition : Alexander Peli (Jerusalem)
Persian Edition : Fereydoun Ardalan (Teheran)
Dutch Edition : Paul Morren (Antwerp)
Portuguese Edition : Benedicto Silva (Rio de Janeiro)
Turkish Edition : Mefra Telci (Istanbul)

Assistant Editors
English Edition : Howard Brabyn
French Edition : Philippe Ouannès
Spanish Edition : Jorge Enrique Adoum

Illustrations : Anne-Marie Maillard

Research : Christiane Boucher

Layout and Design : Robert Jacquemin

All correspondence should be addressed to the Editor-in-Chief in Paris

N° 11 - 1973 MC 73-2-294

Page	
4	**PAKISTAN : 5,000 YEARS OF ART AND CULTURE** *By Syed A. Naqvi*
9	**MOENJODARO MODERN METROPOLIS OF ANTIQUITY** *By S.M. Ashfaque and Syed A. Naqvi*
10	**EVERYDAY LIFE IN HARAPPA AND MOENJODARO** Photo report
12	**TERRACOTTA IN WONDERLAND** Photo report
14	**WORLD CIVILIZATIONS FROM 2500 TO 1500 B.C.** A comparative table
16	**MOENJODARO IN PERIL** *By Hiroshi Daifuku*
19	**ART TREASURES OF PAKISTAN** Eight pages in full colour
27	**POETRY AND REALISM IN MOGHUL MINIATURE PAINTING** *By Mumtaz Hasan*
28	**MYSTERY SCRIPT OF THE INDUS VALLEY** *By Ahmad Hasan Dani*
31	**THE COMPUTER TAKES A CRACK AT CODE-CRACKING**
34	**THE GLORY THAT WAS SHALAMAR** Lahore's 17th century garden of delights *By Muhammad Ishtiaq Khan*
39	**NASIMI, POET-PHILOSOPHER OF AZERBAIJAN** *By Vagif Aslanov*
41	**UNESCO NEWSROOM**
42	**LETTERS TO THE EDITOR**
2	**TREASURES OF WORLD ART** Young Hittite mother (Turkey)

PAKISTAN : 5,000 YEARS OF ART AND CULTURE

Photo © Papigny, Paris

The present grows out of the past, it has been said, and the future out of the present. The better we understand the past, the better shall we be able to mould the future. Pakistan is a nation which can boast a history going back almost 5,000 years. This land, perched in the heart of the Asian continent, has forged its own rich culture and original artistic expression, blending and assimilating cultural elements from both East and West : Greco-Buddhist art of Gandhara (cover photo of the Buddha), Moghul miniature painting and landscape art, Islamic architecture, and Pakistan's oldest cultural complex, Moenjodaro (which must be saved from destruction) have all enriched the nation's vast cultural heritage.

NEW PRICE OF THE UNESCO COURIER

The continued rise in production and distribution costs has made it necessary to increase the price of the UNESCO COURIER.

From January 1, 1974 our new rate will be as follows :

Annual subscription : 24 French francs
Single copy price : 2.40 French francs

We are sure that all readers will understand the need for these measures and will continue to support the UNESCO COURIER not only by renewing their subscriptions, but also by offering gift subscriptions to friends and relatives. Readers are assured that the Editors will do their best to present each month an informative, provocative periodical of the highest editorial standards.

Unesco's National Distributors (see list page 43) will inform subscribers of equivalent rates in other currencies.

PAKISTAN
5,000 YEARS OF ART & CULTURE

by Syed A. Naqvi

Photo Guy Thomas © J. Biltgen, Paris

4 **Islamabad is the new capital of Pakistan, but for a short period before its construction, Rawalpindi nearby had the honour of being Pakistan's interim capital. Located near the ruins of Taxila, it marks the site of the Stone Age civilization of the Soan valley (see page 5). Photo shows delicately carved minarets and dome of a mosque in Rawalpindi.**

THIS issue of the "Unesco Courier" is devoted in major part to Pakistan and its rich heritage of art and culture. Pakistan's cultural history goes back almost 5,000 years when a great civilization was born in the Indus valley (see article page 9). Excavations at two of its major cities, Moenjodaro and Harappa, show that the Indus valley people reached a remarkable stage of development in town planning and architecture and an extraordinary degree of artistic sophistication. Today the site of Moenjodaro is threatened with destruction by salt corrosion and flooding from the Indus river.

THE recent flood damage to cultural monuments and educational facilities in Pakistan amounts to a real disaster affecting the country's future, declared René Maheu, Director-General of Unesco, at a special press conference held in Paris last September. World public opinion, he said, must be alerted to the serious damage from floods in the Punjab and in the Indus valley. The number of educational establishments at all levels either destroyed or damaged was in the order of 8,000, nearly 800 of them secondary schools or post-secondary and technical institutes. The damage, so far calculated at $13 million, affected buildings, libraries, equipment and laboratories, said Mr. Maheu.

DAMAGE had also been suffered by over 30 monuments of major importance and 150 other monuments or archaeological sites. The threat to the famous site of Moenjodaro, in which Unesco is particularly interested, had been considerably increased. Mr. Maheu appealed to international solidarity, urging those who were able to contribute in cash or in kind to help the rebuilding of the educational infrastructure and the preservation of the cultural heritage of Pakistan.

UNESCO and the Government of Pakistan have drawn up a plan for the preservation and development of the Moenjodaro site. The first phase will require an estimated $7.5 million (see article page 16). The Executive Board of Unesco has authorized the Director-General to launch an international campaign aimed at raising $5 million towards the first phase of the preservation and protection of Moenjodaro.

CULTURAL relics of a country are the virtual foundations for advancement in corporate life. As achievements acquired after prolonged struggle with nature and environment, they manifest the store of creative intelligence, initiative, perseverance and integrity that have gone into the making of a particular national character.

Pakistan has been very fortunate in this respect. Admittedly, this land has been an important primeval stage for the grand and grim drama of man's first endeavour, his integral rise, his phenomenal fall and the great resilience which kept the stream of human life in action in spite of all obstructions and intermittent lapses.

Rough and rugged implements unearthed by the eroding current of the river Soan near Rawalpindi carry the saga of human toil and labour to the interglacial ages roughly estimated at 500,000 years before our time. These are stone "choppers" and "hand-axes" which are hardly different from river-rounded pebbles to the layman's eye. They have revealed a written chapter to the archaeologist proving that even in so remote a period man had proved his intellectual superiority over all other beings of the jungle. Indomitable and free, he roved through the thick forests and hunted other animals for food and perhaps even for sport.

But we have no other records to link those interglacial *anthropos* to their primate ancestors or to more civilized progeny. It is in the mounds of Baluchistan that a chink is opened to the distant past.

The pieces of pottery excavated in Baluchistan dislose the existence of a new era. Here we find a more continuous chapter of human activity dating back to 5000 B.C. though still in the Stone Age. Here, man is already established both as herdsman and farmer. He is found settled in villages in the little valleys amongst the hills or occasionally on the outskirts of the plains. He is seen growing crops, milking cows and shearing sheep.

Yet much more has to be explored to reconstruct the true position of Pakistan in this vital phase of growth and experiment which culminated in the great civilization of ancient Mesopotamia on one side and the Indus Valley on the other.

Between the years 2500 and 1500 B.C., there flourished in the Indus plain one of the most well-developed civilizations of the ancient Middle East. Moenjodaro and Harappa, the two important city sites of this civilization exposed by the archaeologist's spade, are the outstanding examples of regimented life.

The wide, straight roads dividing and sub-dividing the city in square blocks, well planned houses and underground system of drainage are still a model to the present day town-planner. The inhabitants lived largely by agriculture but also maintained a trade with lands as far away as Mesopotamia and northern Afghanistan.

Of the early stages of this civilization, nothing was known till the recent excavations at Kot Diji in Upper Sind which provided important clues to this question and also brought to light remains of an earlier culture of equally remarkable character, roughly datable from 3000 to 2500 B.C. It seems to have influenced different aspects of life and culture of the Indus people, though our information is still very meagre.

By about 1500 B.C., the Indus Valley Civilization, however, seems to have disappeared under inexplicable conditions followed by a wide gap of about one thousand years. The excavated remains at Taxila and a number of monasteries and stupas in the north-west now bring us down to the period of recorded history. It was no longer an isolated culture.

Although separated by the lofty Himalayas and the Hindu Kush ranges from the neighbouring cities of central Asia, Taxila still formed part of one and the same Buddhistic civilization. The first city of Taxila or Bhir Mound as it is known, has preserved little to show any notable advancement in art and architecture (see "Unesco Courier", October 1972).

The serene pool of this life was, however, rudely disturbed by the haughty and youthful Macedonian intruder in 326 B.C. But this conquest by Alexander proved a boon in disguise. The pagan Greeks soon

CONTINUED NEXT PAGE

SYED A. NAQVI, *internationally known archaeologist and museologist, was General Director of Pakistan's Department of Archaeology and Museums until last July, when he joined Unesco's Division for the Development of the Cultural Heritage. Former head of the National Museum of Pakistan, in Karachi, he has excavated at many Pakistani sites including Moenjodaro, Taxila and Mansura. Among his studies on archaeology and ancient art are "The Muslim Art" (1966), "Gandhara Art" (1967) and "1,400 Years of Quranic Calligraphy" (1973).*

Photo Turab Ali, Karachi, Pakistan

Photo Dept. of Archaeology and Museums, Pakistan

Few sculptures in stone have been found at Moenjodaro. Above, two striking pieces now in the National Museum of Pakistan, at Karachi. Left, a limestone head from the late period of Moenjodaro (1500 B.C.). The hair is cut short and held in place with a net. Right, the famous King-Priest, carved in steatite (about 2500 B.C.). The trefoil pattern on his tunic suggests his priestly functions. From Mesopotamia to the Indus the trefoil was a religious symbol closely linked with the cult of the stars.

PAKISTAN *(Continued)*

found themselves subdued by the superior religious logic of the Buddhists and employed all their art and intelligence in creating a new Buddha with beautiful Greco-Roman features and an oriental halo. This mode of sculpture, which has since come to be known as Gandhara Art, marked an escape from the conventional Indian style.

In 711 A.D., at the time when the Gothic Kingdom of Spain was captured and when Kashghar was being conquered by an Arab army, the provinces of Sind and Multan were annexed to the dominions of Islam. This first impact of Islam on the life and culture of this region is markedly manifest in the excavated remains of Banbhore, an Arab port near Karachi, and in the early Islamic art and architecture of Hyderabad, Multan, Rohri, Uch, Sehwan and Brahmanabad.

The culture which the Muslims brought from Syria and Persia created, with the fusion of local elements, a tradition which was henceforth to dominate the scene, and gradually became identical with the art and culture, thought and aspirations of the sub-continent.

The political conquest of the land was, however, left to the Turks who came in the wake of the invasions of Sultan Mahmud of Ghazni in the 11th century A.D. But, with the exception of very few specimens, most of the surviving relics of Islam may be attributed to the Imperial Moghuls or their contemporary local dynasties. The marked absence of Muslim monuments prior to the Moghuls is a strange phenomenon and difficult to explain unless it is supposed that the enhanced building activity of the 16th and the later centuries completely swept away earlier and outmoded structures.

The existing monuments of this pre-Moghul Sultanate period (1206-1526) are grouped—save a few tombs at Thatta—in Multan. The finest of them, the tomb of saint Shah Rukn-i-Alam (1320-24), has been described as "one of the most splendid memorials ever erected in honour of the dead". It is octagonal in plan and the brickwork is elaborately carved with a liberal inter-mixture of azure and white glazed tiles.

Architecturally, the tomb marks an epoch in Indo-Islamic forms and anticipates elements which went into the making of a number of Moghul monuments during the following centuries. The features which distinguish the architecture of this period are a rugged simplicity and massiveness showing central Asian and Persian influence, circular or polygonal forms, and extensive use of local material.

The Moghul Empire of India was established by Emperor Babur in 1526. But it was Akbar the Great who laid its real foundation. Born in 1542 at Umarkot in Sind, he left before his death in 1605 not only a large empire and a dynamic social and economic system, but also a distinct style of art and architecture created by a harmonious fusion of the parallel strains of central Asian, Persian and indigenous traditions. This Indo-Iranian Moghul style was further developed and refined in the succeeding century by his grandson Shah Jahan, the Master Builder. Pakistan possesses some of the finest creations of this Golden Era.

Many buildings from the Moghul period are to be seen in Thatta, the ancient capital of Sind. Here, in the old city lies Shah Jahan's Mosque, a marvel in coloured tile work, while countless mausoleums of princes, ministers, governors and holy men spread over an area of six square miles on the nearby Makli Hill, the biggest necropolis of the East.

With the advent of the Moghuls, Lahore entered the front rank of Asian cities with the construction of a series of magnificent structures. Today, many of the great relics of Moghul architectural achievements can still be seen there including the fortified citadel begun by Akbar and subsequently enriched with dainty palaces by his successors. Jahangir's mausoleum, Noorjahan's tomb, the Shalamar Gardens and Wazir Khan's Mosque are some of the other outstanding monuments which remind us of the great role played by the Moghuls as patrons of art and architecture. ■

5th century peregrinations of the Chinese monk Fa-Hsien

The Chinese Buddhist monk, Fa-Hsien, is famous as one of the great traveller-scholars of antiquity. At the beginning of the 5th century he undertook an extraordinary pilgrimage, traversing thousands of miles of desert, mountain and jungle to follow in the footsteps of the Buddha across the ancient Indo-Pakistan sub-continent. For 15 years, from 399 to 414 A.D., Fa-Hsien travelled in search of all the places visited by the Buddha, recording every scrap of information about him and describing festivals held in his honour and the monuments erected to him. Below, a short passage from Fa-Hsien's "Record of Buddhistic Kingdoms" (translated by J. Legge, Oxford, 1886) :

...Seven days journey to the east brought the travellers to the kingdom of Takshasila, [Taxila] which means "the severed head" in the language of China. Here when Buddha was a Bodhisattva, he gave away his head to a man; and from this circumstance the kingdom got its name.
Going on further for two days to the east, they came to the place where the Bodhisattva threw down his body to feed a starving tigress. In these places also large topes [shrines] have been built, both adorned with layers of all the precious substances. The kings, ministers and peoples of the kingdoms around vie with one another in making offerings at them. The trains of those who come to scatter flowers and light lamps at them never cease. The nations of those quarters call those (and the other two mentioned before) " the four great topes "...

Right, detail of a statue of a bodhisattva or future Buddha. The folds of the robe and the style of the sandal are characteristic of a form of Greco-Buddhist art known as " Gandhara " (4th and 3rd centuries B.C.) which flourished in an area around Peshawar in north-west Pakistan.

Photo Guy Thomas © J. Biltgen, Peshawar Museum, Pakistan

The terracotta figurines found at Moenjodaro have furnished invaluable information about the customs and costumes of the period. Right, a woman carrying baskets on her head and wearing a short skirt held in place by a belt with a large buckle. Around her neck she wears a pendant with large stones. The men and women of Moenjodaro seem to have had a predilection for jewels.

Photo Guy Thomas © J. Biltgen, Paris

MOENJODARO MODERN METROPOLIS OF ANTIQUITY

4,500 years ago in the valley of the Indus, an extraordinary civilization flourished covering a million square kilometres

by S.M. Ashfaque and Syed A. Naqvi

THE Indus valley in Pakistan shares with Mesopotamia and the valley of the Nile the pride of being the cradle of one of the earliest civilizations of the world. Moenjodaro, an important metropolis of that civilization, exposed by the archaeologist's spade about 250 miles north of Karachi, bears eloquent testimony of a highly developed society.

The original inhabitants of the South Asian sub-continent were described in the Vedas as heathens and barbarians speaking gibberish, living in fortified cities and raising herds of cattle. But excavations carried out at the Indus valley sites of Harappa and Moenjodaro in 1921 and the subsequent years established that the people living in these 4,500-year-old cities were highly civilized and industrious, possessing a high standard of arts and craftsmanship, and a well developed system of pictographic writing.

In area, the Indus Valley Civilization was much more extensive than the civilizations of Mesopotamia and Egypt combined, being roughly 1,600 kilometres in length from north to south and more than 800 kilometres in breadth from east to west.

The economy of the cities of Harappa and Moenjodaro was based upon the fertile valleys of the major rivers of the Indus basin and the easy means of transportation which these rivers afforded. Agriculture was the main occupation of the people. There is evidence to show that wheat, barley, sesame, dates and cotton were the main agricultural products.

The vast quantity of burnt bricks and common use of terracotta pottery indicate that in the past, wood was available in plenty in the countryside to provide fuel for the kilns. The brick-lined drains found in the remains of the city and pictorial representation on seals of such animals as tiger, rhinoceros, elephant and buffalo, which favour a moist habitat, go to prove that the Indus valley enjoyed a copious rainfall in its heyday.

The surplus of agricultural products and the availability of easy means of communication made it possible for the people to barter their goods for raw materials such as metals, semi-precious stones and spices from outside. The trade links of the Indus valley have been traced to central Asia, Afghanistan, north-eastern Persia, south India, and nearer home to Baluchistan, Rajasthan and Gujarat. Trade was mostly carried over land routes, but there is also evidence of sea links.

Direct evidence of the use of sail-boats is confined to some pictures on a seal, a potsherd graffito and a terracotta relief found at Moenjodaro. The picture of the boat on a small steatite seal shows a craft with sharply turned up bows and stern, a central cabin, mast and steering oar. Such boats appear to be mainly suitable for river sailing, but possibly they also ventured out along the coastal waters up to Lothal at the head of the Gulf of Cambay in the south-east and to Sutkagendor on the Makran Coast and the Persian Gulf in the west.

The ruins of Moenjodaro fall into more or less two distinct parts: a lower and upper city. The upper city, close to the Archaeological Museum of Moenjodaro, is an oblong mound of which a considerable portion has been exposed to view. It comprises the Great Bath, the Great Granary, the Pillared Hall and a number of other structures arranged in rows divided by lanes and by-lanes. The remains of the ancient civilization are topped by an imposing Buddhist stupa of the second century A.D., rising 72 feet above the surrounding plain to dominate the scene.

The lower city lying to the east is an extensive mound of undulating surface, three large portions of which have been excavated. The exposed areas show extensive remains of residential quarters arranged in blocks neatly divided by streets and lanes.

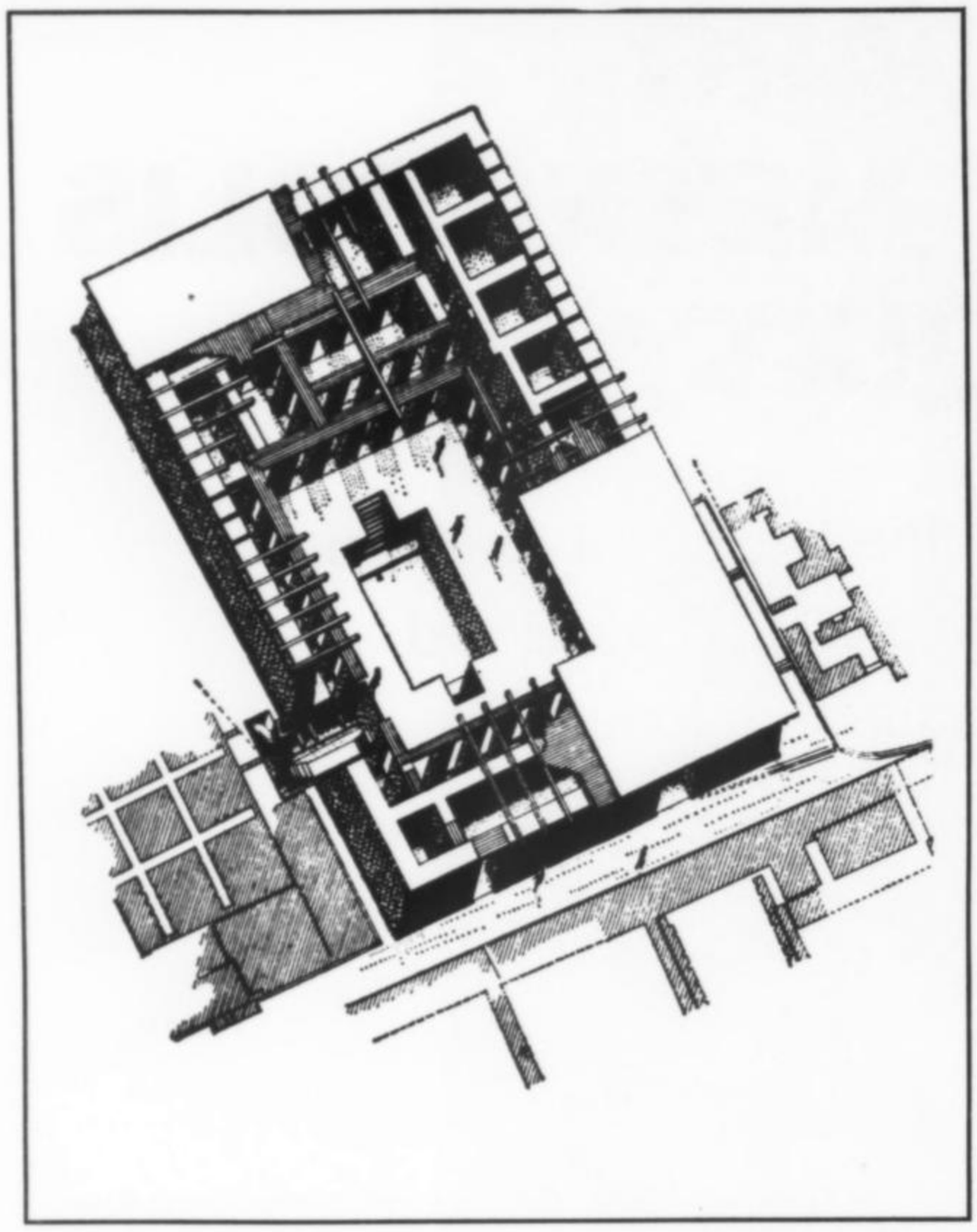
Excavations in the upper city have revealed that for the most part, it was rebuilt upon an artificial hill 20 to 40 feet in height, crowned by the Buddhist stupa. The artificial platform of the citadel is built of mud-brick and mud.

Evidence shows that a rising water table and floods had plagued the city even as they do today. Especially in the lower city, closer to the river in the east, there are traces of embankments and terraced structures built to protect the settlement from the river erosion and inundation.

CONTINUED PAGE 11

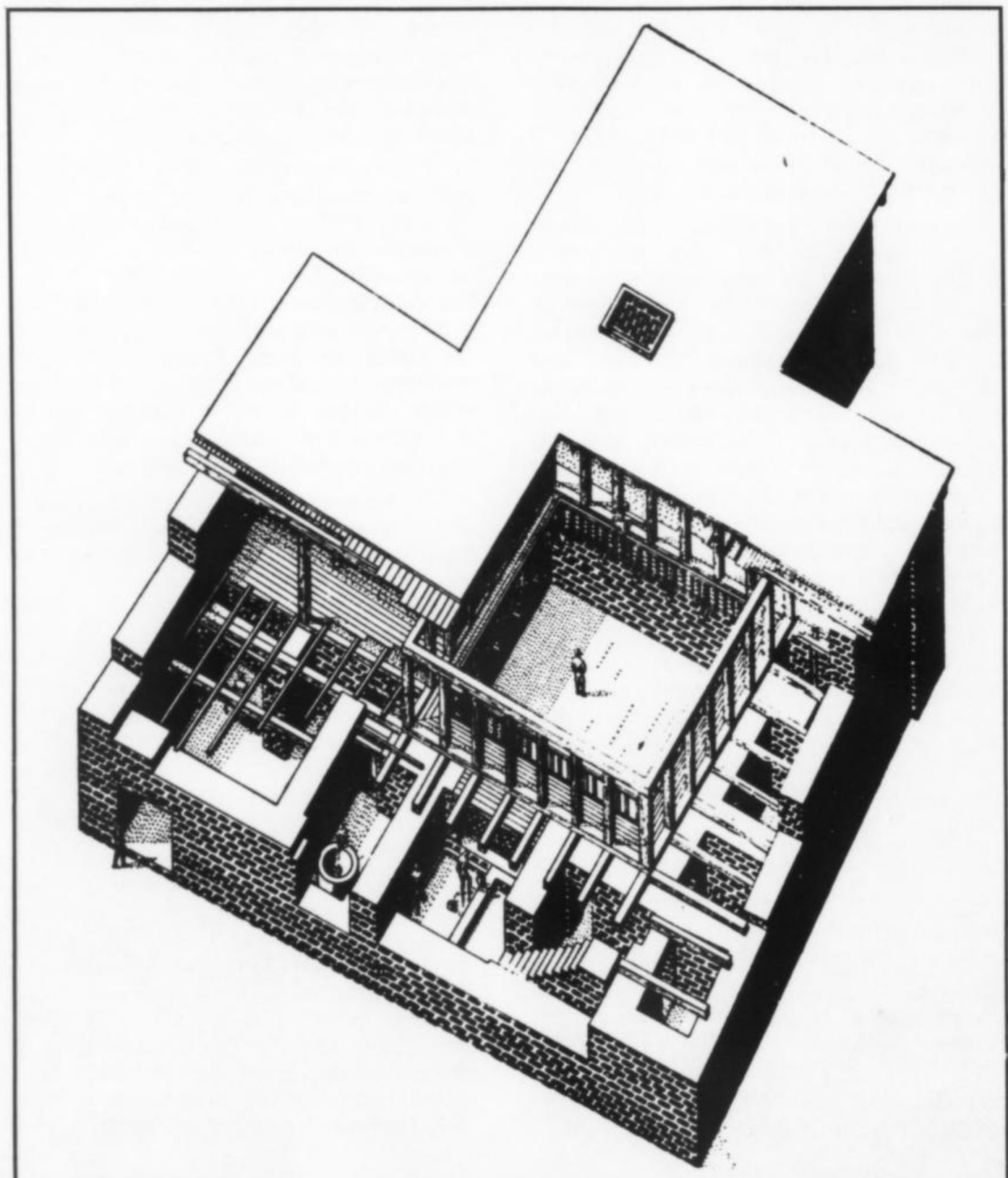
S.M. ASHFAQUE *is head of the Epigraphical branch of Pakistan's Department of Archaeology and Museums and was formerly head of the Ethnological Department of the National Museum of Pakistan in Karachi. Author of many papers on archaeology and museology, he has made a special study of astrolabes and other astronomical instruments developed during the Moghul period.*

SYED A. NAQVI *(See note page 5).*



EVERYDAY LIFE IN THE CITIES OF THE INDUS

The vestiges uncovered at Harappa and Moenjodaro have provided a valuable insight into the daily lives of the inhabitants of these two cities 4,500 years ago. Archaeologists have been able to reconstitute a picture of the architecture and the function of many buildings. Above, a reconstitution of the Great Bath, the most remarkable building of Moenjodaro. The 12-metre-long bath itself was made completely watertight by the application of a layer of bitumen between two layers of brick pointed with lime mortar. Right, reconstitution of a large house containing a bathroom, a well and several rooms giving on to a central courtyard. At Harappa, archaeologists have also uncovered 17 threshing floors (opposite page) placed at the base of the city's grain silos. They consist of large, circular, brick platforms with a central hole perhaps used for crushing the grain with a pestle. Above right, a shop or craftsman's workshop at Moenjodaro. The cone-shaped depressions in the floor were perhaps dyers' vats or holders for oil jars.



Drawings © P.P. Pratt, London.

Photos © Papigny Paris

MOENJODARO *(Continued)*

The houses of Moenjodaro remind one of the dictum of Francis Bacon, "Houses are built to live in, not to look at." It seems that the aim of the city builders was to make life comfortable rather than luxurious. The ante-chambers, parlours, courtyards, toilets, staircases and wells seen in almost every dwelling give an impression of immaculate planning for every convenience.

Within the exposed parts of the upper city, the most famous structure is that of the Great Bath, 39 feet in length from north to south, 23 feet in breadth, sunk 8 feet below a brick paved floor enclosed in a courtyard. The rows of rectangular pillars on all four sides indicate a corridor or pavilion which shows that the Bath was a place of some kind of social gathering or, as interpreted by the archaeologist, a place of religious bathing on some particular occasion. The complex of adjacent rooms and water closets strengthens the latter inference, and it may be concluded that life in Moenjodaro was dominated by some kind of priestly guardian or authority.

From the technical viewpoint, the masonry structure of the Great Bath reveals the high degree of skill and craftsmanship that went into its conception and construction. The floor of the bath is reached by brick steps originally provided with timber treads set in asphalt. To make the basin watertight, its floor and sides were lined with bricks set on edge in gypsum. Behind the facing bricks of the sides was a layer of bitumen held in place by an additional lining of bricks encased in a packing of mud-bricks.

On the eastern side of the bathing pavilion, a well with a double ring of brickwork undoubtedly supplied water to the tank through a sluice connected to the basin. Near the south-western corner, there was an outlet by an underground drain covered by a corbelled arch through which the water of the tank was flushed and led down to the western side of the city. All those details not only show the technical ingenuity of the builders but also reveal their deep preoccupation with matters of hygiene.

On the western side of the Great Bath is a peculiar masonry structure consisting of a number of square platforms of more or less uniform size rising five feet in height. The blocks are divided by a network of narrow passages meeting at right angles.

On the eastern and southern sides there are remnants of a superstructure showing timber holes. Basing himself upon the analogy of a granary found at Harappa, the noted archaeologist Sir Mortimer Wheeler advanced the view that this structure also represents a kind of silo for grain storage.

A series of solid masonry blocks formed a podium supporting the timber floor of the Great Granary. The narrow passages were the air ducts to keep the bottom of the silo dry and safe from the effect of ground moisture. The external walls of the podium were battered like that of a fortress, and on the northern side was an alcove with a brick pavement. The presence of a granary at Moenjodaro indicates that there was probably a barter system for exchange of commodities, the granary serving the purpose of a state treasury.

Towards the north-east of the Great Bath, there is an outline of a long building the plan of which suggests that it was the residence of the Chief Priest, or perhaps a hostel for a number of priests. This cloister-like structure includes an open courtyard enclosed by verandahs on three sides. The structural alternations suggest that once five doorways opened into it from a lane on the eastern side and one door each on the southern and western sides. The floor throughout the rooms is paved with bricks, and there is evidence of two staircases leading to an upper storey.

The presence of such buildings besides the ordinary dwellings suggests that the ancient people had certain social institutions which provided occasions for group activities. It is just possible that this large building might have been the "punchait" or court of the city magistrate.

The three important buildings of the upper city, the as yet unexcavated complex of structures in the southern

CONTINUED NEXT PAGE

1

Photo Guy Thomas © J. Biltgen, Paris

TERRACOTTA IN WONDERLAND

In the Indus Valley Civilization terracotta was widely used for a variety of purposes—in architecture (bricks and pipes), for household objects (vases and other containers), for ornaments (bracelets) and in sculpture (figurines of humans and animals). (1) A terracotta rhinoceros found at Moenjodaro. The potters also made terracotta toys such as this solid-wheeled, single-shaft cart (4) drawn by a pair of water buffaloes, identical with those still used today by Pakistani farmers in the Sind. Many curiously fashioned human figurines have also been unearthed at Moenjodaro. (2 and 3.)

MOENJODARO *(Continued)*

sector and the probability of peripheral towers suggest that it was the residential sector of the élite and the officials who controlled the secular and religious administration.

The lower city of Moenjodaro is an excellent example of scientific town planning with its basic gridiron system of main streets demarcating blocks of residential houses. The principal thoroughfare is the Central Street running the whole length of the ruins from north to south. The main streets are about 30 feet wide joined by lanes and side streets varying from 5 to 10 feet in width. The doors of the houses usually open on to the lanes rather than the main streets.

Some of the houses have rectangular windows, which might have originally been closed by lattices of alabaster and terracotta. To keep out the scorching sun the number of doors and windows was reduced to an absolute minimum. The common features are the courtyards, a range of rooms of modest size, staircases leading to the upper floors, and quite frequently, wells to supply water.

The age of the lower city of Moenjodaro can be clearly judged where stack-like masonry columns are seen standing on the floors of rooms in the houses. These are the brick linings of the wells dug in later times when the houses below had already fallen into ruins and been covered with deposits up to the top of the wells. Looking down into a well is a common enough experience, but seeing a well from the outside, like a water jug, is intriguing and irresistibly reminiscent of Alice in Wonderland.

Walking south down the Central Street one passes acres of the unexcavated mound arriving at an area with a community well. This area had been the scene of the massacre of the innocent people of Moenjodaro when a horde of Aryans attacked the city and rang the death-knell of this most remarkable culture.

A short distance further south is the dyer's shop where we see a number of shallow pits capped with bricks to hold the vats of chemicals and dyes. From there the Central Street leads to an area where the reduced size of the residential quarters indicate it to be the sector of the working class and the poorer people.

South beyond that point the mound extends much farther but has been left intact for future excavations. On the eastern edge of the lower city there is considerable evidence of mud-embankments and terraced structures obviously raised to protect the metropolis from inundation during monsoon floods of the river Indus.

Various art objects have been

2

4

3

2 : Photo Frances Mortimer © Rapho, Paris ; 3 : Photo Guy Thomas © J. Biltgen, Paris ; 4 : Photo Dept. of Archaeology and Museums, Pakistan

found at Moenjodaro including a large number of burnt clay male and female figurines, models of birds and miniature representations of animals.

The females figurines are bejewelled and wear pannier-like head-dresses, some of which are stained with smoke perhaps because they served as incense burners. These figurines are supposed to represent the Mother Goddess whose cult was widespread in the contemporary cultures of the Middle East.

The male figurines are usually bearded and nude. They probably also represent some kind of deity. The terracotta figurines are modelled by hand and painted flesh-colour. Noteworthy among the male figurines is a steatite bust of a nobleman or King-Priest wearing a loose robe engraved with a trefoil pattern in relief. Such a pattern seems to carry some divine or authoritative connotation as it occurs on the Bull of Heaven found at a Sumerian site, and dates to the time of Gudea, ruler of Ur about 2200 B.C.

Trefoil patterns also occur on some Egyptian antiquities of the second millennium B.C. At Moenjodaro such patterns can also be seen on a large steatite head which might have been an amulet or a protective sign against the evil eye, worn by some priest or a monarch. This enigmatic pattern and the sedate bearing of the male bust have impressed the archaeologists enough to assign him the title of King-Priest.

Sculptural art shows further diversification in the small bronze figurine of a dancing girl standing with her right arm akimbo, and her left hand resting on her left thigh. She is naked, has a rather ugly face and is wearing a necklace with three pendants hanging over her burgeoning breasts. Two thick bangles are seen on her right arm above the elbow while a spiral ornament covers the whole length of her left arm.

But the best examples of the plastic art of Moenjodaro uncovered up to now are no doubt the many magnificent seals bearing life-like figures of animals. These include the Brahmani bull, the short-horned bull, buffalo, tiger, rhinoceros, crocodile, and also mythological creatures like the unicorn, a human figure with horns and a tail, and a horned tiger.

Besides these animals and goblins depicted on seals, there are also several miniature replicas of monkeys and squirrels carved with a mastery of natural detail. In their more light-hearted moments the sculptors also modelled toy bullock carts and domestic animals for the amusement of children.

The seals found at Harappa and

CONTINUED PAGE 38

GREAT WORLD CIVILIZATIONS

INDUS

The Indus Valley Civilization (Pakistan) reached its economic and cultural zenith between 2500 and 1500 B.C. On this double page we indicate some of the great civilizations of Asia, Africa, Europe and America which also flourished at the time. It is interesting to note that, thanks to the 7000-year-old tree-ring samples provided by the bristle-cone pine in California, it has become apparent that Carbon-14 dating methods have been consistently underestimating the dates of monuments. It is now thought, for example, that the megalithic graves of Brittany, France antedate the Pyramids by as much as 2,000 years and that Stonehenge was being built in England at about the same time as a sculptor in Moenjodaro was capturing in bronze the graceful movements of the young dancer shown above.

Photo Dept. of Archaeology and Museums, Pakistan

SUMER

Sargon of Akkad, whose portrait in bronze (above) was discovered at Nineveh, became king of Mesopotamia in about 2370 B.C. The rich Tigris-Euphrates valley had already been cultivated for some 2,000 years by the Sumerians (their name derives from the Sumer valley, in southern Mesopotamia). Skilled craftsmen, artists and traders, they established a sophisticated urban civilization which was emulated by the Akkadians in northern Mesopotamia. At the time of Sargon, Mesopotamia had trade links with the Indus valley cities and with the Mediterranean countries. Certain objects, in particular seals and jewellery, seem to indicate influences from the Indus Valley Civilization. The Mesopotamian pictographic script, which first appeared about 3500 B.C., was modified over the centuries to develop into the cuneiform script (now deciphered) used throughout the Near East until about 1000 B.C.

Photo © Unesco - Rencontre, Lausanne - Paris

EGYPT

During the period of The Old Kingdom (about 2800-2200 B.C.) an aristocratic culture developed in Egypt under the Pharaohs of the IIIrd, IVth, Vth and VIth dynasties which saw a flowering of the arts and sciences (in particular astronomy and medicine). The great pyramids of Giza were built during this period and sculpture was marked by a finely expressed realism. Above, the kneeling figure of a high-ranking official, dating from the Vth dynasty, today in the Cairo Museum. About 6,000 years ago, Egyptian civilization was beginning to develop in Africa along the Nile valley, in the regions bordering the Red Sea, in Sudan and Ethiopia. The development of papyrus during the 3rd millenium B.C. encouraged the spread of a form of writing which developed into hieroglyphics (deciphered in 1822). Countless texts inscribed on stone and other materials have enabled experts to reconstitute every phase of this amazing civilization which retained its distinctive character even during the period of Roman occupation.

Photo © Unesco - Rencontre Lausanne - Paris

ANATOLIA

Shortly after 2000 B.C. the Hittites established their capital city Hattusas (today Bogazkoy, 150 km. east of Ankara) in the mountainous region of Anatolia in central Turkey. The royal archives of the Hittites contained thousands of clay tablets which have provided detailed information concerning Hittite economic, religious and legislative structures, the names of kings and dates of battles and treaties. Mesopotamian tablets indicate that a civilization existed in Anatolia, dating from 3000 B.C., and refer to the time when Sargon of Akkad came to the throne of Mesopotamia, as well as to a people speaking the Hatti language who were later displaced by the Hittites. The Hittite empire collapsed under pressure from neighbouring peoples and the last survivors established small feudal enclaves in Syria which were finally absorbed into the rising Assyrian empire. Warriors and legislators rather than artists, the Hittites, nevertheless, produced fine rock-carvings for their open-air sanctuaries. Skilled metal-workers, they also fashioned copper or bronze animal figurines, such as the stag above. The stag was a favourite subject with Hittite artists and was no doubt a cult figure.

Photo © Ara Güler, Istanbul

FROM 2 500 TO 1 500 B.C.

CHINA

This striking Chinese bronze vase is some 3,500 years old. It dates from the era of the Shang dynasty (1500 to 1027 B.C.). Many bronze tripod vases, like the wine vessel *(chia)* shown above, or in other shapes, have been found on the site of the Shang capital of An-yang in the province of Honan. Most are richly decorated with extraordinary, intricate designs and motifs. The perfection of the Shang bronzes has never been equalled. At An-yang, archaeologists have unearthed thousands of bones inscribed with ancient Chinese characters. Already at the time of the Shangs, Chinese civilization had a very long past, marked by a highly homogeneous cultural tradition, of which the most ancient site in the Huang Ho (Yellow River) plain became the cradle of Chinese Bronze Age culture.

Photo from "Archaeological Discoveries in New China", Pekin, 1972

MEXICO

The standard text-book dates of the ancient civilizations of pre-Columbian America are being pushed back as a result of the latest scientific research. Thus, the Olmecs, usually said to have flourished in Mexico from about 800 B.C., are now considered to be much older—as much as 1500 B.C. and, according to some authorities, even older (2000 B.C.). The Olmecs, or "hule (rubber) people", established themselves in the plains bordering the Gulf of Mexico. Remains of large mud buildings of a later period have been discovered at the great centres of La Venta, Tres Zapotes and San Lorenzo-Tenochtitlan. Among later Olmec art treasures that have come down to us are a number of colossal heads (carved in imported stone, some weighing up to 18 tons) and countless clay or jade objects and figurines. The Olmecs devised a calendar, an arithmetical system and a form of hieroglyphic writing and their cultural influence spread throughout Mesoamerica (Mexico and central America). Photo shows Olmec figurine (13 cm. high) modelled in clay.

Photo © José Verde, Mexico

AEGEAN SEA

This gold funerary mask covered the face of a hero of old buried some 3,600 years ago. It was discovered at Mycenae, in the Peloponnese, Greece, by the German archaeologist Heinrich Schliemann at the end of the 19th century. The tombs opened by Schliemann contained fabulous art treasures —gold funerary masks and ornaments, clay and bronze vases and weapons inlaid with gold and silver. Among them were objects of Cretan origin and others made by artists from mainland Greece. Mycenaean civilization was at the height of its glory in about 1600 B.C. and its influence extended to Macedonia, Cyprus, Syria, Asia Minor and even to Sicily. Tablets found at Mycenae and at Knossos, Crete, inscribed in the famous "Linear B" script, contain some of the oldest known texts in the Greek language.

Photo © Unesco - Rencontre Lausanne - Paris

IRAN

This female figurine (24.5 cm. high) is a fine example of the terracotta art of ancient Iran between 2000 and 1000 B.C. It was discovered at Tureng Tepe, a site in northern Iran. Four thousand years ago, this region was an important trading crossroad linking Mesopotamia, the Indus valley and the countries bordering the Caspian Sea. Iran is the seat of a very ancient civilization and from 7000 B.C. settlements appeared in the Zagros mountains to the north of the Persian Gulf. Tablets with numerical notations dating from about 3500 B.C. have been unearthed as well as later tablets inscribed in proto-Elamite writing. Between 4000 and 2000 B.C. Iranian communities, at Susa, Sialk and Jiyan in particular, produced painted pottery of a remarkable beauty and finesse.

Photo © Archaeologia Viva, Paris

Far right, visitors at the Moenjodaro Museum examine an artist's impression of the ancient city at the height of its prosperity. Right, a once bustling street in the lower city of Moenjodaro. Preserved for centuries beneath a protective layer of soil, the excavated city now faces the triple threat of a rising water table, corrosion by salts and flooding by the river Indus.

MOENJODARO IN PERIL

Unesco alerts world opinion to an imminent catastrophe

Photo Dept. of Archaeology and Museums, Pakistan

by Hiroshi Daifuku

CHANGE is ever present and stability an illusion. Even continents, once thought to be immovable, are known to be great rafts floating above the liquid core of the earth. Their movements affect the rise and fall of mountains, the shape of the coastline, and only the relatively short lifespan of man makes them seem immutable.

Streams form, change their courses or disappear. Temperature changes, from those of long duration lasting millenia to changes which take place in a few minutes (due to a passing cloud), the growth of bacteria, lichens, woody plants and trees, all contribute towards the change of the environment.

Preservation of a site or monument represents, therefore, a constant struggle to stay or to slow this process. Inevitably, if the climate is harsh and there are great variations in temperature and humidity, as in the case of the site of Moenjodaro in Pakistan, the task becomes difficult and costly.

It is a semi-arid region with an average annual rainfall of about 12 cm. (under 5 inches). It is a region of low relief and as a result the Indus river, through silting, raises its bed above the plain (during the rainy season the mean level of the river is about 3 metres above the level of the site). The river thus forms great loops, succeeded by ox-bow lakes, and constantly shifts its bed. At times it moves away from Moenjodaro; at others (as at present) it turns towards the site to threaten its eventual destruction.

The construction of a dam (the Sukkur Barrage) nearby and the development of irrigation agriculture have contributed to a rise of the water table. While irrigation agriculture can be productive in semi-arid lands, drainage in a nearly level flood plain is very difficult, and all too frequently irrigation results in the rise of a heavily saline water table.

In the southern reaches of the Indus the area of canal-irrigated and cul-

HIROSHI DAIFUKU *is head of Unesco's Division for the Development of the Cultural Heritage. The author of many studies on anthropology, conservation and museography, he has contributed frequently to the "Unesco Courier".*

Photo © Paul Almasy, Paris

tivated land which has been seriously damaged by water-logging and salinity is close to 5 million acres. In the area of Moenjodaro, low-lying land already glints with salt and lies abandoned. At the site itself the level of the water table varies seasonally from 1.5 to 3.9 metres below the surface, reflecting the rise and fall of the level of the river, and seasonal irrigations.

Through capillary action water rises about 2.4 metres (8 feet) above the aqueous layer and introduces salts into the bricks composing the monument. During the day high temperatures and low humidity result in rapid evaporation leaving behind, in the bricks, a deposit of salts.

These salts (of which sodium, magnesium and potassium sulphates and carbonates are among the most destructive) crystallize. Those found below the surface exert pressure on the bricks, causing fragments to flake off, progressively destroying the surface and weakening the interior. In solution the salts help to corrode and weaken the structure of the bricks.

Thus, the preservation of Moenjodaro is one face of a problem involving the development of the entire Larkana region. Anxiety about the future of Moenjodaro increased as the bricks began to show greater wear.

At the request of the Pakistan Government, Unesco sent a team of experts to Moenjodaro in January 1964. The mission was led by Dr. Harold J. Plenderleith, then Director of the International Centre for the Study of the Preservation and the Restoration of Cultural Property in Rome. He was accompanied by Mr. C. Th. de Beaufort, a Dutch engineer with considerable experience in working on desalinization problems in Iraq and by Dr. Caesar Voute, a Dutch geologist. The team reviewed with Pakistani specialists all the problems involved as well as the measures which had been taken.

Despite severe handicaps, the Pakistani Department of Archaeology maintained the site for many years, using mud-plaster and mud-brick cappings to help leach the salts away. When the plaster is moist the salts within the bricks will migrate to the mud until the two solutions attain an equilibrium. The removal of the now contaminated mud and its replacement by desalinized mud helped to lessen the concentration of salts and prevented the formation of crystals on or just below the surface.

This did not, however, arrest erosion as constant new supplies of salt were introduced from the ground water and the Department lacked the means to attack the basic source of contamination, the rise of the water table.

The measures to be followed in the preservation of the site are known and include: deflection of the river; lowering the water table; removing or leaching out the salts found in the walls of the buildings. All of these are costly. The decision taken to aid the Pakistani Government in raising funds through voluntary contributions

CONTINUED NEXT PAGE

from the international community will make possible the following measures:

- the construction of a slanting barrier in the river which will deflect the current and turn the river away from the site;
- the construction of a ring of tube wells surrounding the excavated area to lower the water table;
- salt removal and conservation.

The first measure required poses few problems, the technology is known and the results predictable. Insofar as the lowering of the water table is concerned, there are some unknowns. The use of tube wells in Pakistan to lower a saline water table has already been carried out by the government on a large-scale agricultural project in the Punjab.

The discharge of water from the wells at Moenjodaro can eventually contribute towards land irrigation. Nevertheless the process must be carried out with care. The lowering of the water level may result in compression and the effects, particularly on massive structures, must be carefully observed so as to avoid damage and ensure the preservation of the site.

Once the water table is sufficiently lowered the area found within the ring of tube wells will be progressively desalinized. This too may be a long process as the best methods to be used have still to be worked out. The salts found in the monuments dissolve readily which should make it easy to leach them out. On the other hand the fired brick is not of good quality and the mud mortar would wash away if too much water is used.

A common method used to extract salts from stone or brick is to cover it with wet paper pulp. The salts migrate to the pulp which upon drying, is removed. The experimental use of fresh mud (uncontaminated with salt) instead of paper pulp by the Department of Archaeology showed some promise. But it was abandoned as it became a veritable labour of Sisyphus since the salts were constantly replenished from the ground water below.

Once the tube wells are in operation, however, it should be possible to carry out thorough leaching of the salts and to follow this by ordinary maintenance.

The rapid deterioration of the bricks, noted by the Archaeology Department and by the experts sent there should then cease. But work to ensure the continued survival of the monument will have to be continued on a long term basis. Obviously the water table cannot be permitted to rise again, so the tube wells will have to be checked and the machinery periodically renewed (experience in the Punjab gives an average life of 20 years).

Airborne salts, while not an important factor must also be taken into account. Worn bricks must either be replaced with sound ones or somehow consolidated.

INTERNATIONAL assistance to solve the problems of Moenjodaro has taken many forms. In 1969, leading archaeologists under the chairmanship of Sir Mortimer Wheeler examined several proposals to save the site. In 1972, Raoul Curiel (France) led a team which reviewed the final conservation project of the Government of Pakistan. Early this year, Mr. Zulfikar Ali Bhutto, then President of Pakistan and today its Prime Minister opened an international symposium on the preservation of Moenjodaro organized on the site with Unesco's assistance.

Practical aspects were not neglected and in 1972-73, Unesco supplied equipment for two experimental tube wells, including pumps which work inside the tubes and thus remove the need for above surface buildings. A laboratory equipped by Unesco is being built by the Pakistan Government and Unesco is providing a fellowship for the chemist in charge to study the latest techniques used in other countries.

Unesco's Executive Board recently examined the joint Pakistan-Unesco Moenjodaro preservation project which in its first phase will cost an estimated $7.5 million. It authorized Unesco's Director-General to launch an international fund-raising campaign with a target figure of $5 million.

After the work of conservation is completed, the sale of water from the tube wells for irrigation and the revenue from tourism will pay the expenses of maintaining the equipment and site. But while the measures foreseen will stop the primary cause of erosion, constant vigilance and care will be needed if the site is to survive as a vivid reminder that here was the birthplace of an ancient civilization. ■

ART TREASURES OF PAKISTAN

Page 19

BEJEWELLED WOMAN. Terracotta figurine unearthed at Moenjodaro (2500 to 1500 B.C.). The woman is bedecked with necklaces and pendants and garbed in a loin cloth girdled by a broad belt with buckle (see also photo p. 8).

Photo Dept. of Archaeology and Museums, Pakistan

Page 20

ARTIFACTS OF ANTIQUITY. Figures on this page, with the exception of figure (2) come from Moenjodaro. (1) Tiny statuettes of a parrot, monkey and squirrels. Some archaeologists believe them to be children's toys (3) Terracotta four-legged animal with human head. (4) Chessboard and pieces. The great antiquity of this game is here confirmed. (5) Terracotta female figurine; a basket was originally set on each side of the fan-shaped headdress, but only the right-hand one remains. (2) Terracotta figure from Pirak (900 B.C.) the only known archaeological site in Pakistan from the 1st millenium B.C.

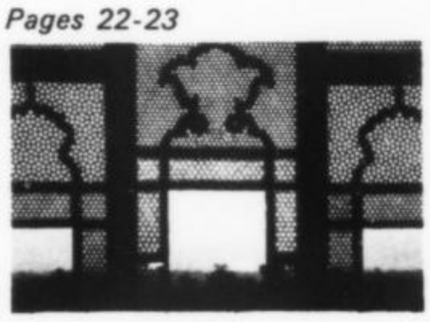
1/4/5) Photo Dept. of Archaeology and Museums, Pakistan
2/3 Photos © C. Jarrige, Paris

Page 21

THE HAND AND THE LOTUS. Sacred plant of the ancient Orient, the lotus is a symbol of fertility and purity. This hand holding a lotus is a work of the Gandhara school of art which flourished in north-west Pakistan and Afghanistan between the 2nd and 5th centuries.

Photo © Turab Ali, Karachi Pakistan

Pages 22-23



SUNDOWN IN LAHORE. Built by Emperor Akbar (1542-1605) the great palace-fortress of Lahore was richly embellished by his successors Jahangir and Shah Jahan who added sumptuous decorations and pavilions. Here the setting sun glimmers through the marble filigree wall of the Naulakha pavilion built in 1633.

Photo René Burri © Magnum, Paris

Page 24

HILLTOP MAUSOLEUM. The Makli hill near Thatta, 50 miles east of Karachi, is an immense necropolis spread out over six square miles with countless tombs of rulers, dignitaries and commoners. Here, a view of the mausoleum of Diwan Shurfa Khan (1638), one of the most impressive of Makli's funerary monuments.

Photo © Papigny, Paris

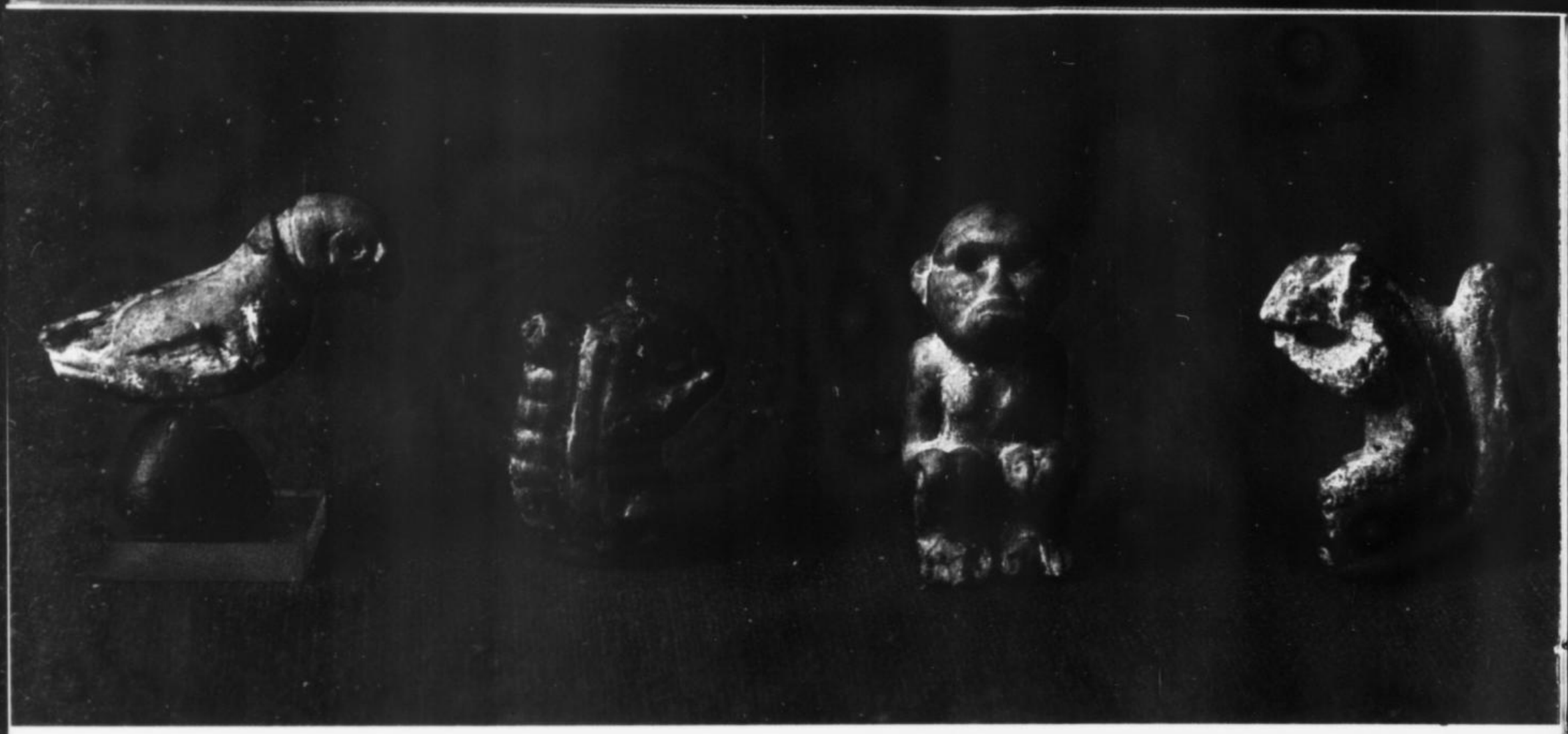
Page 25

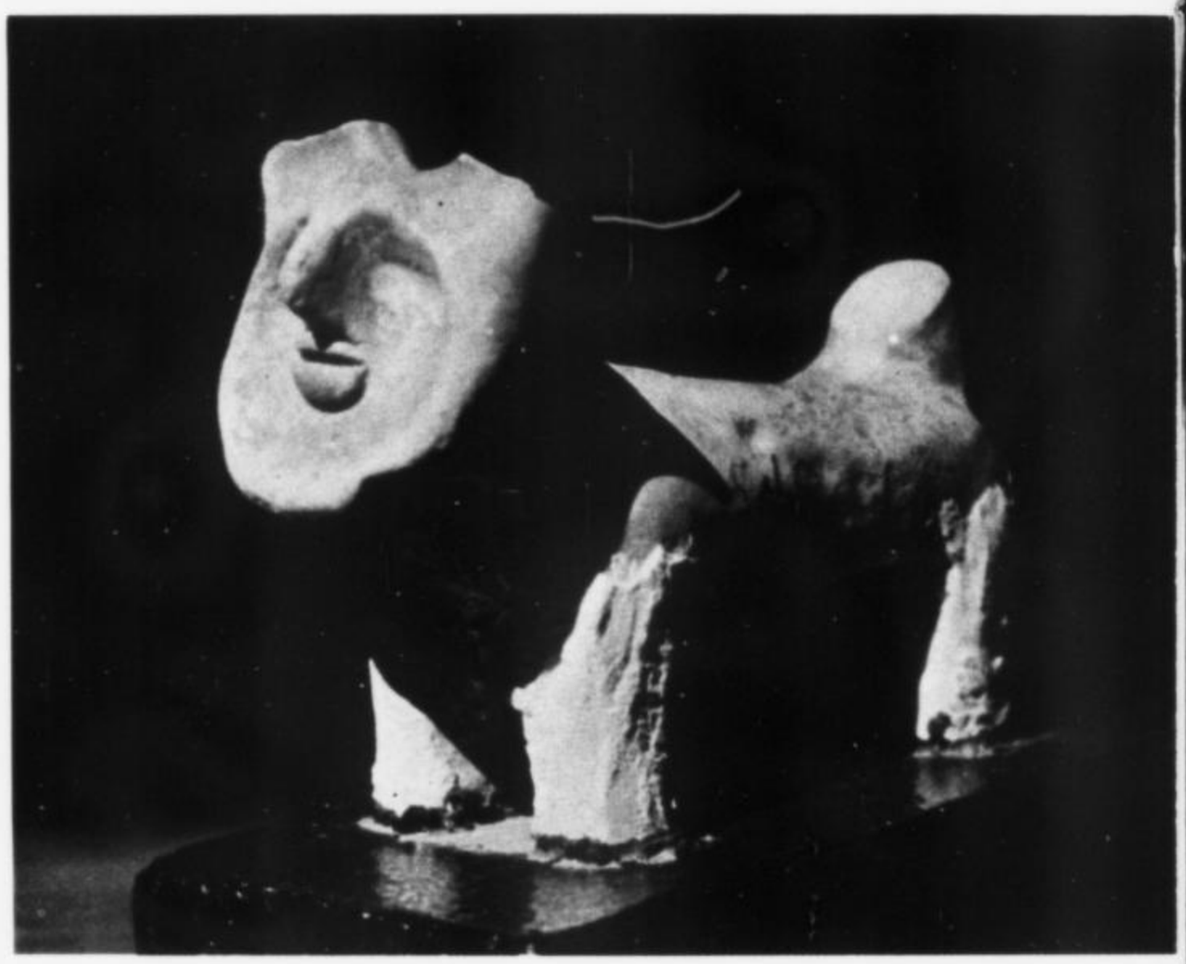
LIGHT OF THE WORLD. This miniature masterpiece is a portrait of Nur Jehan ("Light of the World") wife of Emperor Jahangir — Moghul school painting, 18th century (Lahore Museum). See article page 27.

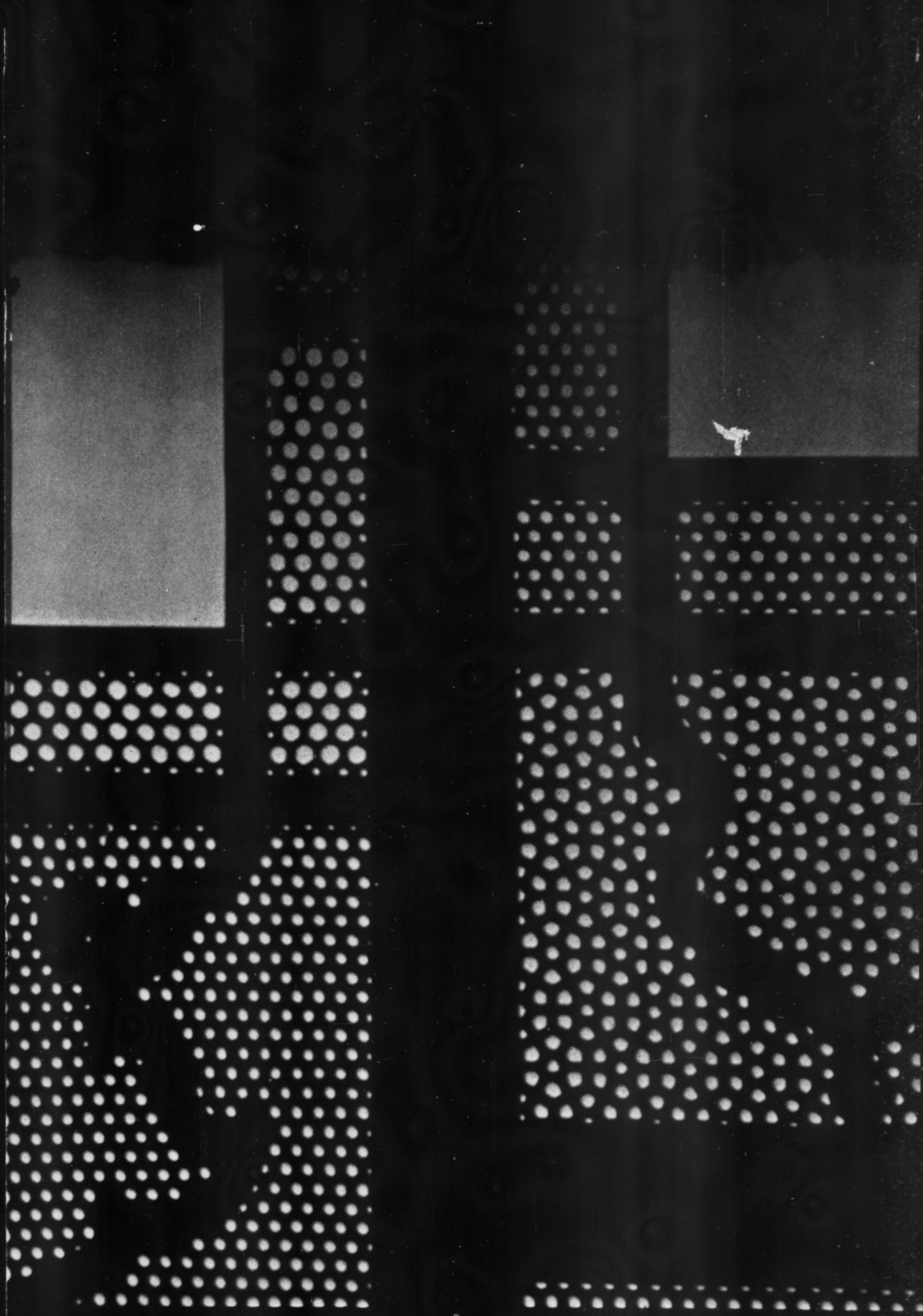
Page 26

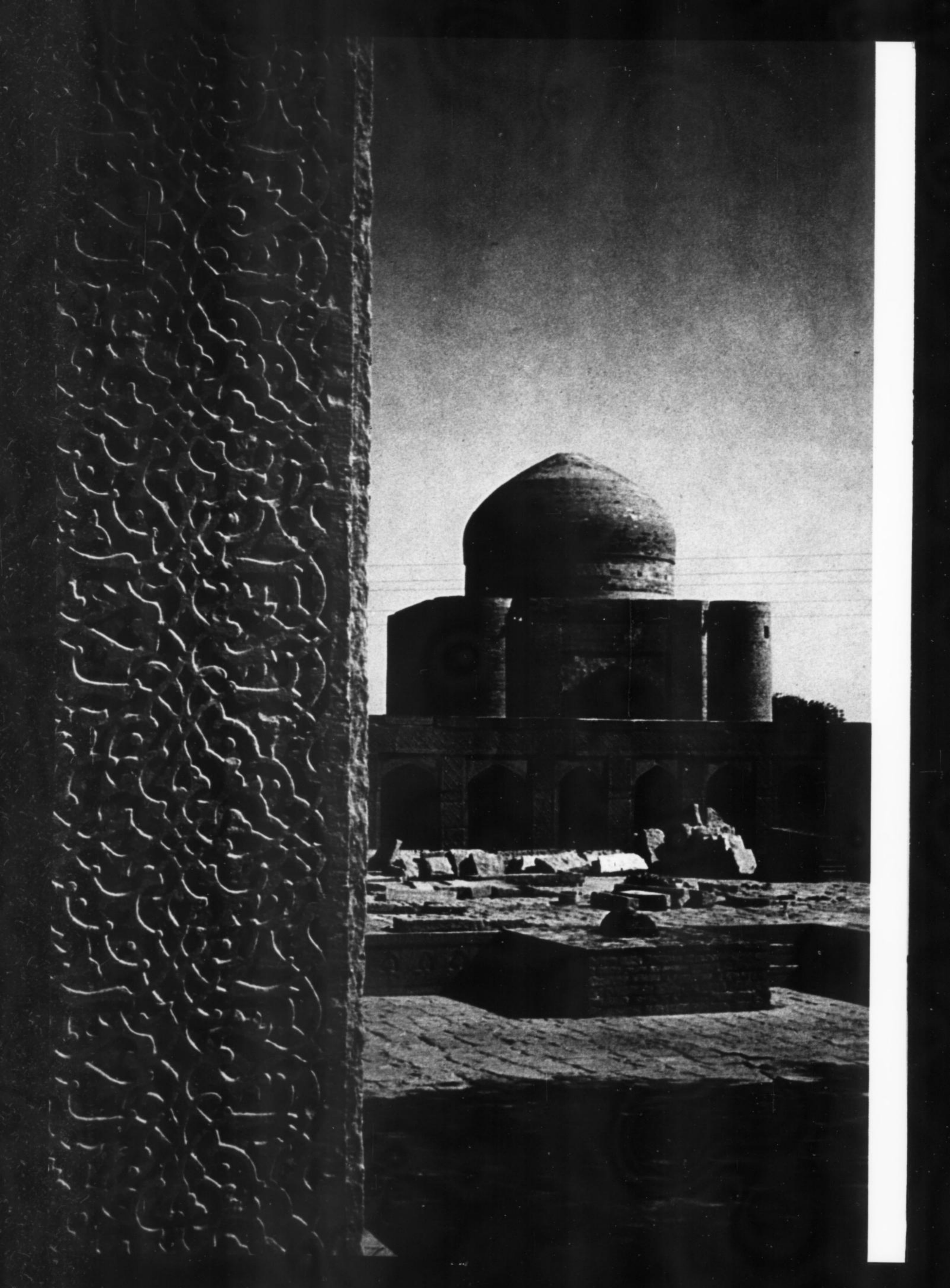
POETRY BY THE LAKE. The Princess Zebunissa with attendants—Moghul school miniature painting, 19th century. She was the daughter of Emperor Aurangzeb and was famous as a poet. She is shown here perhaps reading one of her own poems. (Lahore Museum).

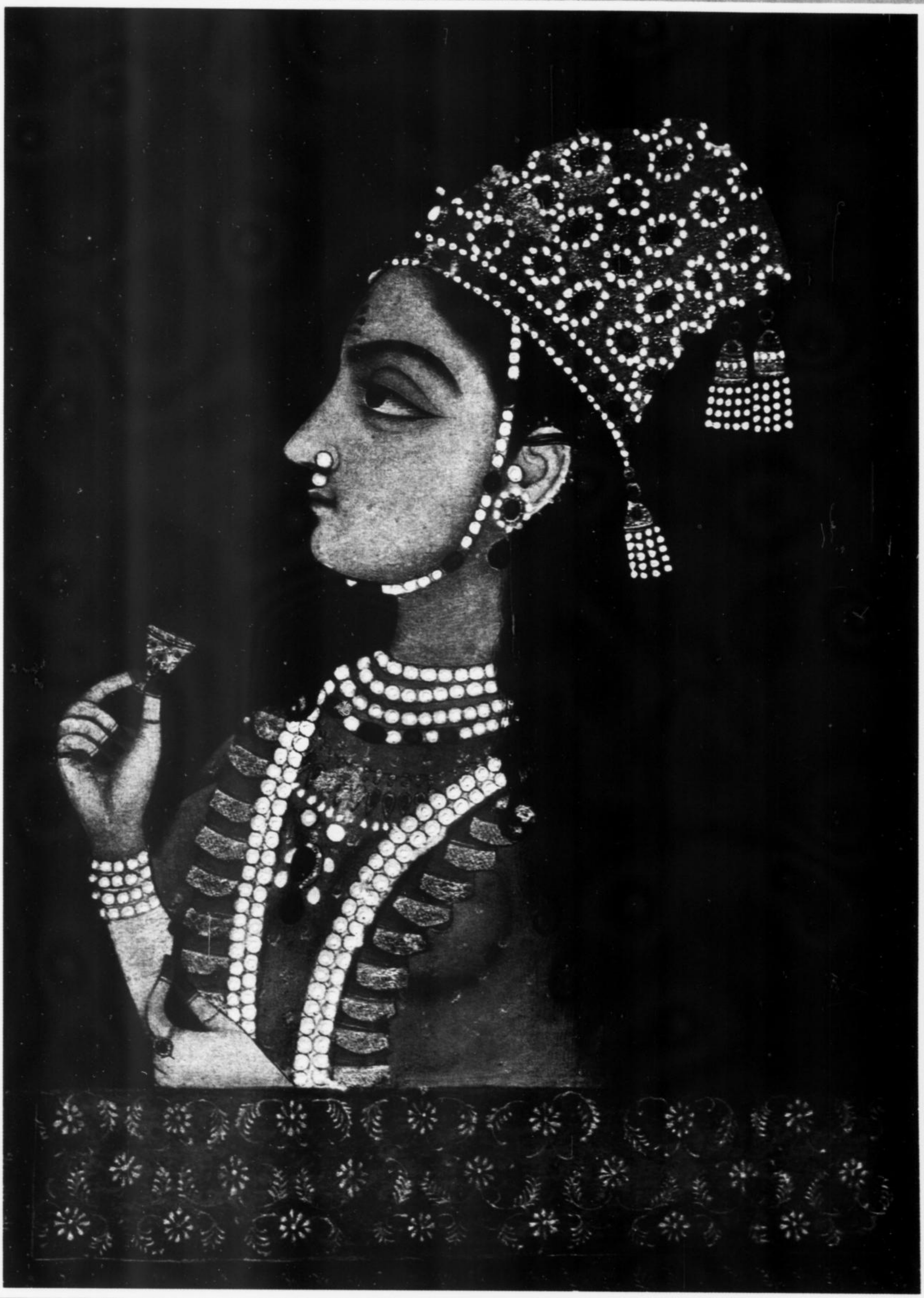
Photos from "Treasures of Pakistan" published by the National Bank of Pakistan

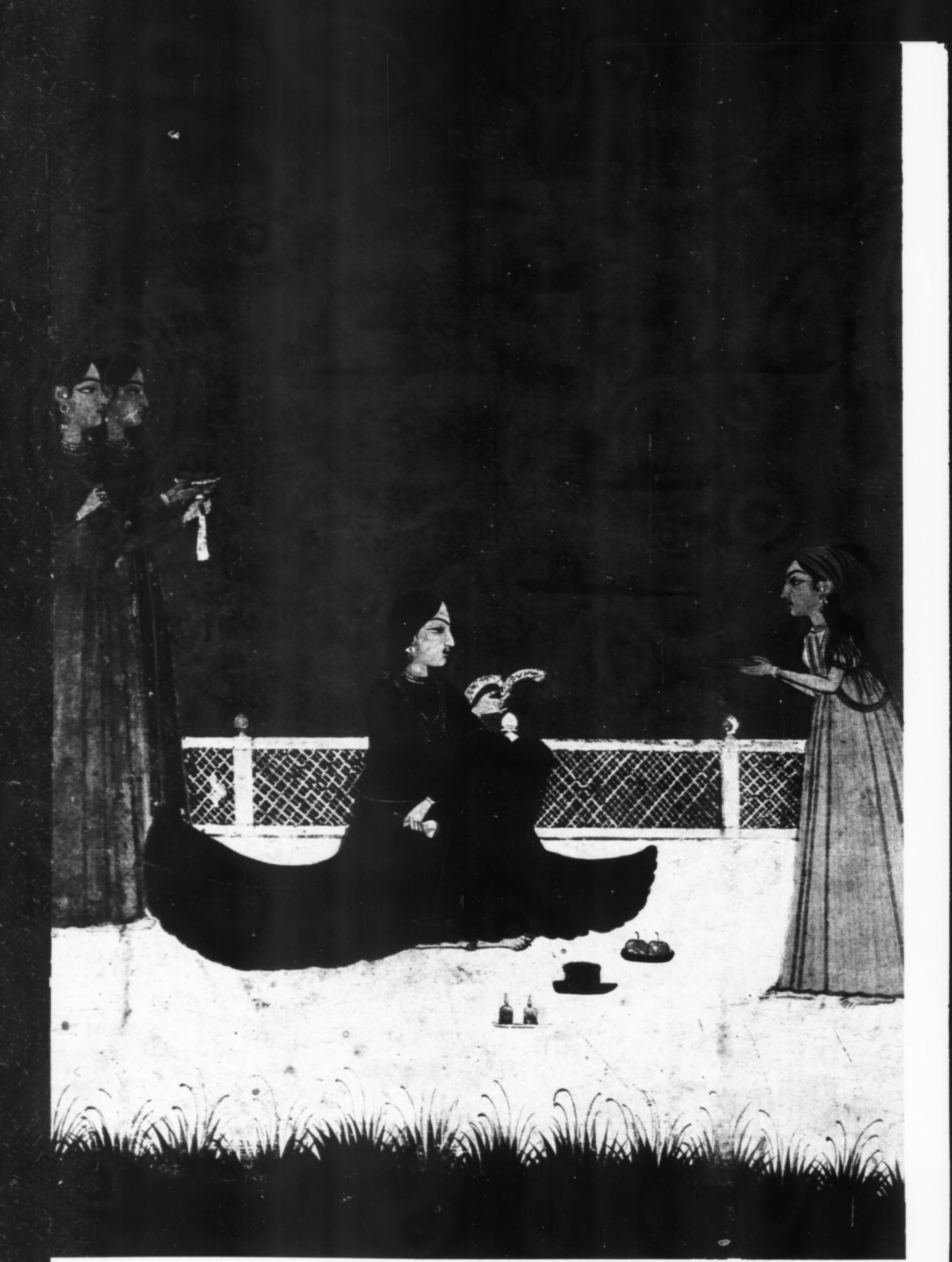












POETRY & REALISM IN MOGHUL MINIATURE PAINTING

by Mumtaz Hasan

MOGHUL miniature painting represents the finest in the miniature arts of the Indo-Pakistan sub-continent. This essentially Muslim school of painting flourished under the inspiring patronage of the Moghul Emperors for well over two hundred years from the second quarter of the sixteenth to the close of the eighteenth century.

At its zenith, its fame reached such distant lands as those of Europe where it aroused the admiration of a master of the calibre of Rembrandt. At home, it exercised a profound influence on a large number of schools of miniature painting, such as the Rajput, Kangra, and Deccan Schools.

Photo Guy Thomas © J. Biltgen, Paris

An 18th century miniature painting of the great Moghul Emperor Akbar (1542-1602), now in the Louvre, Paris. A generous patron of the arts he was the founder of the Moghul school of art.

The art of miniature painting began in the sub-continent during the later phase of the reign of the Emperor Humayun, who on his return from Iran brought with him two master miniature painters of the court of King Tahmasp I—Sayyid Ali and Abdus Samad. A host of local artists worked under the supervision of these masters from Iran. Moghul art was largely a continuation and an offshoot of the arabesque, two-dimensional decorative Iranian School which, in its earlier stages, was influenced by Chinese painting.

The earlier formative stages of Moghul painting, however, were soon followed by a phase of assertive identity when it showed signs of contact with European art to which it was most probably introduced by the early Christian missionaries.

In course of time, the school evolved a vision of reality all its own. It was undoubtedly this vision, pulsating with life and vigour, that imparted to Moghul art an individuality which is easy to recognize and easier to appreciate.

In this sense, the Emperor Akbar is the real founder of the Moghul school of art. During most of the fifty years of his reign a large number of painters were busy in his *atelier* illustrating manuscripts, mostly epics, such as *Hamza Nameh, Shah Nameh, Tarikh-i-Khandan-i-Taimuriyan* and *Akbar Nameh* and painting portraits of the royal personage and his nobles.

In the manuscripts and album paintings, the Iranian delicacy of detail and linear grace combined with the characteristic Indian palette of varied greens, glowing reds and oranges.

Among the local artists at the royal court were masters such as Mansur, Daswanth and Basawan, who illustrated the *Hamza Nameh*, but most of their finest work was produced in the shape of isolated miniature paintings for albums, portrait drawings, paintings of animals and flowers, hunting scenes and paintings depicting incidents of court life. This was executed in a style which basically was Safavid, but indigenous in most of its details.

During the reign of the Emperor Jahangir, the naturalistic tendency was predominant. It is evident in the careful studies of animals, birds, flowers and trees executed during this period, which rank among the most exquisite examples of Moghul art.

It was during this period that Moghul art reached the zenith of its glory. Whatever Persian influence had lingered during the reign of Akbar, disappeared from the paintings of Jahangir's time. Besides scenes from nature, of which the Emperor was a keen lover, depiction of court life largely constituted the thematic component of the paintings of this period, and the practice of elaborately decorating the mounts of paintings came into vogue.

The style of Jahangir's period continued and was perfected during the reign of the Emperor Shah Jahan, the builder of the Taj Mahal. Technical perfection, uninhibited yet judicious use of colours, and masterly brushwork are the outstanding features of the paintings of this time. Thematically, the court and its splendour along with portraits in groups, of courtiers or dervishes, often dominate the miniatures of Shah Jahan's time.

A new technique of portraiture, which originated during Jahangir's reign and amounted to lightly touching a sketch with colour or gold, came into its own during this period. It attained nobility, representative character and refinement, although it lacked, to some extent, the vitality of Akbar's time and the keen interest in life shown by Jahangir's painters.

It is a tribute to the vitality of Moghul art that even after passing its zenith after the reign of the Emperor Shah Jahan, which ended in 1658, it retained most of its greatness, so far as technique was concerned, till the close of the reign of Muhammad Shah in 1748.

During his reign and that of his predecessor, Farrukhsiyar (1713-1718), painting again became a favourite art at court, but the decline of the Moghul Empire saw artists turning more and more to Nawabs and Rajahs, the local potentates who had established independent or semi-independent states of their own, in search of new patrons and security. At their courts, the imitation of the Imperial Moghul style flourished for nearly another century. ■

MUMTAZ HASAN *is President of the Museums Association of Pakistan. He has been Pakistan's permanent Secretary for Finance and was for many years President of the National Bank of Pakistan. Doctor Honoris Causa of the Gœthe Institute (Fed. Rep. of Germany) he has always been interested in the promotion of cultural activities. His publications include a study of Iqbal, the great philosopher and poet who has been called "the spiritual father of Pakistan", and "In Search of Debul", an historical account of the earliest Muslim city in the Indo-Pakistan sub-continent. He edited the English edition of "The Adventures of Hir and Ranjha" from the Punjabi poem by Waris Shah.*

MYSTERY SCRIPT OF THE INDUS VALLEY

One of the world's oldest writing systems still resists the efforts of scholars

by Ahmad Hasan Dani

Photo Department of Archaeology and Museums, Pakistan

THE Indus Valley lies across ancient migration routes from central and western Asia to India.

The Indus Civilization introduced the first urban life in this valley at a time when similar civilizations had developed on the banks of the Nile and the Tigris-Euphrates valleys. Such urban growth was possible because of a new technical advance in the Bronze Age when the river valleys could be made to yield sufficient crops to sustain the growing human population.

This also led to overseas trade and contacts with distant lands. As a result, a system of writing evolved in each region. Each system had a character of its own, but the earliest forms shared a common pattern derived from the pictures of the objects common in their particular civilizations.

These picture writings, known as pictographs, are not read in the way we read our alphabets. In order to specify the meaning it is necessary to associate one meaning with each pictograph. Such association simplifies the process of understanding. To make it simpler the pictures are reduced in outline and only brief sketches express human ideas. In this way, man developed ideograms to make his symbols understood by others. This process of simplification differed from region to region.

As each region had its own language, the regional ideograms expressed the words of those languages. And thus we see simplified pictures related to human sounds. Man went a step further in the evolution of writing when he could express not only the visible objects in writing but also all kinds of sounds. And in time, the pictures actually lost their real visible shape and meaning. They were reduced to symbols and came to be associated permanently with sounds.

Each of the three great civilizations had their own way of evolution. Egypt developed a system known as *hieroglyph* while Mesopotamia progressed towards wedge-shaped writing called *cuneiform.* The Indus writing is still a mystery and scholars are busy solving it.

The scripts of the forgotten civilizations need to be deciphered. The way to decipherment is either by learning the value of the symbols which would

---

AHMAD HASAN DANI *is professor of cultural history and Dean of the Faculty of Social Sciences at the University of Islamabad, in Pakistan. He started his career in the Department of Archaeology 27 years ago and though he joined the university service later, he has continued his interest in archaeology and carried out a number of excavations. Author of several books on archaeology and history, he is editor of the archaeological bulletin "Ancient Pakistan".*

Photo Guy Thomas © J. Biltgen, Paris

Most examples of the mysterious Indus valley script consist of short inscriptions on seals usually accompanied by representations of real or fabulous animals (see back cover) or, more rarely, human figures (opposite page). Inscriptions on copper or pottery tablets have also been found such as the two above, unearthed at Moenjodaro.

give us words, or by recognizing the sounds of a known language, and finally relating words with sounds. Such a method was possible in the case of hieroglyph and cuneiform writing as the discovery of the same inscription in two or three scripts or languages (bilingual or trilingual), enabled the decipherers to get to the sound and finally they were able to unlock these ancient scripts.

The Rosetta Stone with its trilingual inscription helped to reveal the secrets of the Egyptian hieroglyphs. But no "Rosetta Stone" has so far been found in the Indus Civilization.

Attempts at decipherment however, have not been given up. There must be some other method to decipher an unknown script. After all, symbols are human creations in a given context. If we know thoroughly the cultural context and if we can recognize the symbols in that context and their value, we are on a path that may lead to decipherment.

It is also possible to approach the subject from another angle. Among the many languages spoken today in the world, some are inter-related and form a group belonging to one family. The languages of one family behave in a particular way. If the Indus writing expresses any language belonging to any of the linguistic groups surviving today, its particular sounds could be caught, their behaviour pattern determined, and this behaviour of sounds could then be planted on the behaviour of symbols in order to determine whether the design of the symbols agrees with one linguistic family or another.

This is a complicated method no doubt but the computer, it is hoped, can now help us in finding a solution. But machines work only to the extent that the human brain instructs them to, so first we need to examine the problem methodically.

In the Indus Civilization no long inscriptions have so far been found, but short inscriptions engraved mainly on seals, sealings and bronze tablets have been unearthed. Some are found scratched on pots. The seals carry the negative of the inscriptions and it is their impression which gives the positive reading.

The seals usually carry the figure of an animal—bull, elephant, tiger, unicorn, etc.—and short inscriptions of one to three lines usually occupy the top space.

CONTINUED NEXT PAGE

Did the Indus people speak a Dravidian language?

As all the animals face right, it had been concluded that the direction of writing is from right to left. This conclusion is now proved by an over-writing on a pot in which a left symbol cuts across the right one.

Some of the symbols of the Indus writing are easy to decipher. These are short or long vertical strokes numbering from one to ten or twelve. The strokes are presumed to represent numbers. But are they just numbers? As they occur in various combinations before and after the symbols, it is inferred that they are used to express syllabic sounds.

THE nature of the short inscriptions on the Indus valley seals has led some scholars to believe that they are only the names and titles of the persons who owned the seals and used them to authenticate documents or as a trade mark on bales of cotton or other goods bartered with the lands far and near. This interpretation is based on a similarity with the writing of titles in Ancient Egypt.

Other comparisons have revealed similarities in the shapes of symbols and these have been noted on tablets in places as far away as Easter Island in the Pacific and on tablets bearing Hittite hieroglyphic writing.

But similarities apart, there is no proof that these symbols have the same sound value in different civilizations. It is therefore essential that the system of the Indus writing should first be discovered and then the nature of this system tested as to its suitability with one linguistic group or another.

Another possible method is to determine the particular linguistic group to which the language of the Indus people could possibly be related. Three such claimant groups—Indo-Aryan, Munda or Proto-Austro-Asian, and Dravidian—have been thoroughly examined in this connexion. On purely historical grounds, the Indo-Aryan group has been left out as the Aryans appeared on the scene in the post Indus Valley period.

Yet some scholars have tried to link it with the Indus writing while others have sought connexions between the Indus script and the much later Indian writing called Brahmi. These attempts, however, have not proved successful, and neither have efforts to link the Indus script with Munda, which has been found to be unsuitable on cultural and linguistic grounds.

A team of Soviet scientists has analysed the Indus symbols in a scientific manner and has tried to read them on the basis of the Dravidian language (1).

The Dravidian with Brahui as one of its branches is still spoken in central Baluchistan. It is known to have been pre-Aryan in this part of the world and thus offers a possibility. But in the main area of South India where Dravidian is now spoken, the Indus Civilization is not known to have penetrated.

However, the real difficulty is to establish the particular form of the Dravidian language which may have been spoken by the Indus people. All attempts are now concentrated on reconstructing that language and with its help, deciphering the Indus symbols.

Meanwhile new discoveries in the Gomal valley of Pakistan, in south Afghanistan and in Soviet Turkmenistan have shown that during the Bronze Age there was more contact between the peoples of these regions than had been supposed. Not only this fact but other considerations suggest that the Altai group of languages may possibly help to solve the mystery of the language used by the people of the Indus valley nearly five thousand years ago.

IN an effort to clarify the mechanics of the Indus writing, several attempts have been made to collect the inscriptions, arrange them in some order, determine the exact number of known symbols, specify the beginning and end signs, and follow the definite form of the symbols as they undergo changes.

The latest work of this kind, compiled by Asko Parpola and his colleagues from Finland at the Scandinavian Institute of Asian Studies in Copenhagen, brings together in one place the entire material suitably arranged with the help of a computer. This is ready-made material which could be used profitably by other would-be decipherers.

In this work, the total number of signs listed is 396. Some of the symbols are easily recognizable. They include the homo-sign, animal sign and bird, fish and insect signs.

Others are taken from local flora such as the mushroom, the *pipal*-leaf and flower and probably the tree itself. Some represent objects such as the bow-and-arrow, shrimping net, or wheeled cart, but most of them are simple lines or geometrical forms.

HOWEVER, the signs have two main features: some appear in various combinations and others are modified by the addition of strokes. The significance of these two features is not yet established. It is generally assumed that they qualify the original sign in the same fashion as the grammatical suffixes used with words in the Altai group of languages or in Dravidian.

In modern Turkish, which belongs to the Altai group, we have the base word "coçuk" meaning child. Changes are made by adding suffixes as in this example:

"Coçuk" (child) + "lar" = "çocuklar" (children) + "iniz" = "cocuklariniz" (our children) + "dan" = "çocuklarinizdan" (from our children).

Languages which behave in the above fashion belong to the agglutinative language group. If Indus writing belongs to this group, it should be possible to analyse it and classify the symbols under the main signs and suffixes. These suffixes should indicate the grammatical behaviour of words. Once the grammatical behaviour is determined, it is possible to place the writing definitely in one linguistic group or another. But so far, this last stage of classification has not been done in the case of the Indus writing.

The absence of long inscriptions in the Indus Civilization writing should not be a bar to its decipherment. It is possible that some scholar, in a remote corner of South America, Africa or China may one day devote himself to this task and give us the analysis that can unravel the mystery of the Indus script. ■

(1) Attempts at decipherment using a computer have been made since 1964 by Soviet teams in Moscow led by Yu. V. Knorozov.

The computer takes a crack at code-cracking

Photo © Francis Brunel, Paris

How do experts set about deciphering an ancient, pictographic script? The famous Rosetta Stone, inscribed in hieroglyphic, demotic and Greek characters, provided a key to the secrets of the hieroglyphs of ancient Egypt. But in the case of the Indus script no such key has been found and a much longer, more painstaking study is required involving complex semantic, phonetic, grammatical, historical, statistical and other factors combined with informed guesswork.

For almost a decade, four Finnish experts, Asko Parpola, Seppo Koskenniemi, Simo Parpola and Pentti Aalto, of the Scandinavian Institute of Asian Studies, Copenhagen, have been attempting, with the aid of a computer, to decipher the 300 or so signs of the Indus script on the basis of the 2,000 inscriptions on seals found in the Indus valley. Their work is based on the assumption that the Indus script is related to Dravidian. This assumption and the interpretations arrived at by the Finnish team have been contested by other authorities.

We present below extracts from one of the preliminary studies "Further Progress in the Indus Script Decipherment", Special Publication No. 3, published in 1970 by the Scandinavian Institute of Asian Studies. They give the layman an insight into the reasoning used by experts in an attempt to crack the coded messages that have come down to us over some 4,000 years.

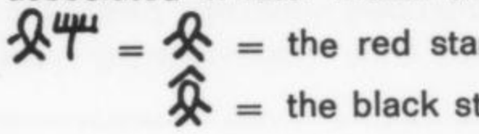
Texts © Copyright. Reproduction prohibited

Jupiter of the Indus

THE five planets denoted by the signs

must have been called after their "colours" by the ancient Dravidians, for the original Dravidian names coincide with the colours associated with the planets in the Sanskrit and Tamil sources: Mars = red; Mercury = green; Jupiter = golden, yellow; Venus = white; Saturn = black.

The above order of the planets can be deduced from the weekdays (Tuesday - Saturday) with which they are associated in later Indian tradition.



= the red star = Mars = Siva

= the black star = Saturn = Krsna

= the white star = Venus = Balarama

= the green star = Mercury = Ganesa

= the golden star = Jupiter = Brahma

Jupiter's Sanskrit name is Brhaspati, which is also one name of Brahma, the Creator of the Hindu trinity, called also Brahmanaspati, Prajapati or Vacaspati. Since, on the seal above, the god's name is one of the two planet signs that had not yet been deciphered, it seemed worth while to examine whether the scene would fit to what is known about Jupiter and Brahma.

The man kneeling in front of the horned personage in the midst of the holy pipal or fig-tree (Ficus religiosa) is obviously the god's high priest (note his "crown") and

CONTINUED NEXT PAGE

corresponds to the sign

= *an* "man, servant"

at the end of the inscription [read from right to left]. Most probably the sign

(here "ritually pure")

on the other side of the tree also refers to him. The person in the fig-tree must be the god himself, whose name in the genitive case precedes the sign

.

The sacred tree of the planet Jupiter is according to the Sanskrit sources, the asvattha or pipal tree; in Dravidian this tree is *aracu* and *aracan* means besides "king" also the planet Jupiter. The same tree, usually called udumbara, is the sacred tree of the god Brahma/Prajapati, being a symbol of life and fertility and the place of the soul after the death.

In the Brahmana texts we have numerous variations of the story of how Prajapati created these worlds. They used to begin by telling that Prajapati hatched himself and then created these three worlds, which he then hatched, etc. In the Vedic agnicayana ritual where Prajapati is the central deity, he is represented by a golden man; the acts re'ating to this figure are accompanied by verses of "he who was born of golden womb". In the Mahabharata it is told that Brahma was hatched out of the golden egg that lay floating on primeval waters.

Jupiter is the golden planet, and *pon* "gold" is also the Tamil name of the planet Jupiter. If we allow for a slight difference of the final nasal, we have a homophone which would give a good explanation to the scratch inside the fish in the pictogram

pun "wound, scratch".

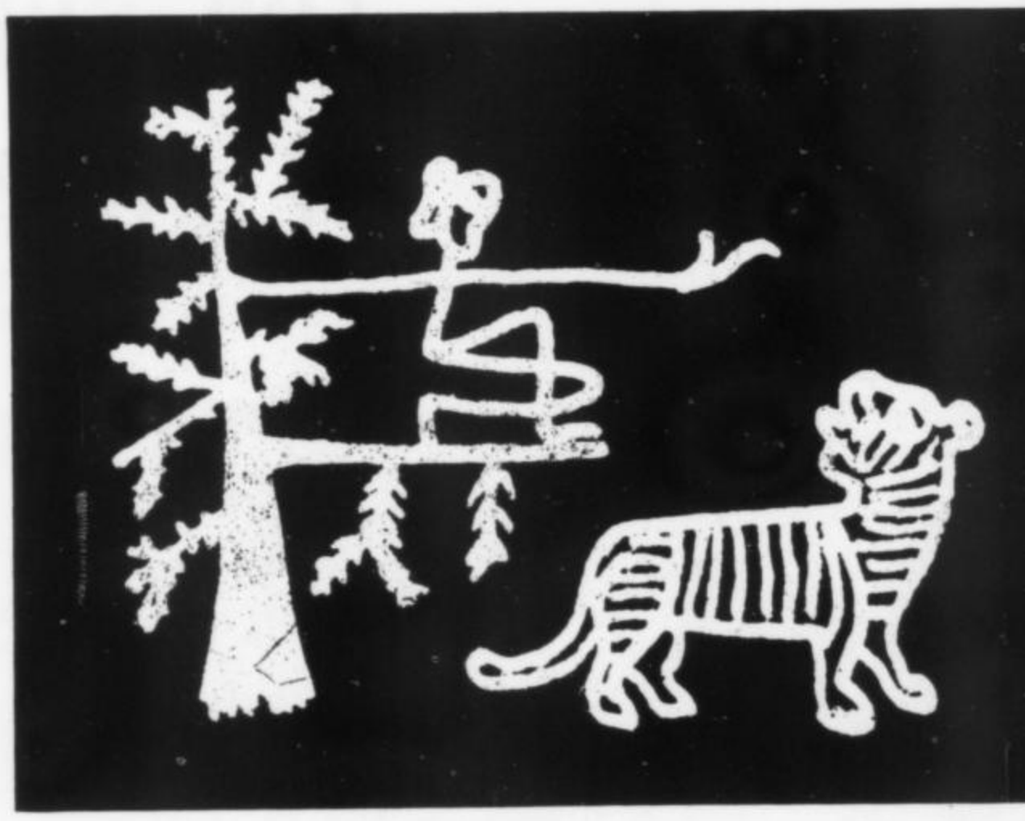
Brhaspati and Brahmanaspati must mean approximately the same as Prajapati and be translations into Sanskrit of a Dravidian epithet meaning "the lord of creation and life". But Brahma also has a name Vacaspati "the lord of speech", and in fact he is the husband of Vac, "Speech, Voice", who is identical with Sarasvati the goddess of wisdom (= Tamil *kalai-makal*) and the life-giving holy river of north-west India. It is not a mere coincidence that the best Dravidian word for (the principle of) "life", *uy, uyir, ucir,* means besides "life; salvation, reanimation" (= Sanskrit Brahman) and "propagation, emitting semen" (= Sanskrit praja) also "speech" (= Sanskrit vac), the basic meaning being "breath" (= Sanskrit prana), an important concept intimately connected with Brahma/Prajapati.

Brahma and Sarasvati had seven children, the "seven sages" who are the stars of the constellation of Great Bear. The planet Jupiter also has seven children, six sons and one daughter by Candramasi, Seven persons are seen depicted at the bottom of the seal.

Brahma is represented as riding on a wild goose (hamsa), which symbolizes the soul and the sun, and the Mahabharata tells in several places how Prajapati assumed the shape of a golden goose, which is the first incarnation of Visnu, the supreme soul. Also in Tamil literature Brahma is said to have a swan in his banner. But in the Vedic ritual the animal specially connected with Prajapati is the horse, the foremost symbol of sun and fertility of the Aryans. The vahana or "vehicle" of the planet Jupiter is a yellow horse or goose. (Is the unclear object in the seal a goose?)

The planet Jupiter holds in his hand a lotus, and is sometimes represented as sitting on a lotus. The lotus is, like the fig tree, an important symbol of fertility (of *kantal, kanta, katta* "bulbous root of lotus" and *kanta* "male, husband") and also the seat of Brahma, who according to one legend sprang from a lotus that came out of Visnu's navel. That Jupiter was a god of fertility like Prajapati is evident also from the great importance that was attached to the favourable position of Jupiter in the case of marriages in post-Vedic times.

The significance of the human-headed ram on the seal is not yet clear.



The mark of the tiger

THE Indus seals usually have in addition to the pictographic text a design of an animal. The ancient Tamil kings, gods, tribes, etc., had totemic emblems depicted in their flags, seals, houses, etc., consisting mostly of different kinds of animals. Ancient Tamil literature has preserved a most interesting account of the use of these seals. It is said that mer-

Photo Department of Archaeology and Museums, Pakistan

The priestess and the drum

IT would be difficult to draw a recognizable picture of the round *tampa* drum, but everybody would recognize that is a picture of a drum.

But in order to show that it is not the hour glass-drum *(tamara or utukka)* that is meant, the other side is left open to show that a drum beaten on one side only is concerned:

or

The intended meaning "priest (ess)" also apparently influenced the form of

chandise was sealed with emblems of respective kings... Goods unloaded from ship to shore and vice versa, and the articles gathered on the shore, were sealed before letting them go out of the customs yard. The act of sealing the bags is explained in the words *puli porittu puram pokki*, which means "the tiger (sign) was stamped and was passed out". The extant Indus sealings were stamped on clay tablets attached to bales of goods.

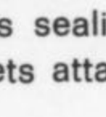
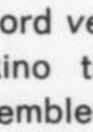
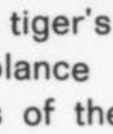
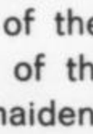
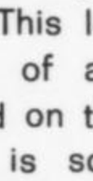
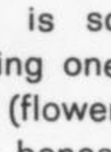
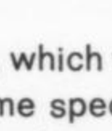
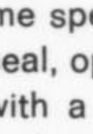
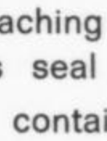
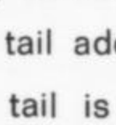
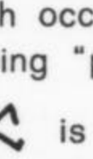
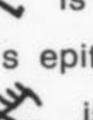
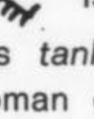
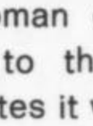
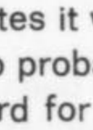
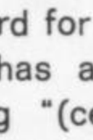
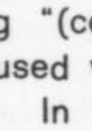
The word *venkai* means in Dravidian both "kino tree" and "tiger", both totemic emblems of clans. The colour of the tiger's stripes bears a strong resemblance to the colour of the flowers of the kino tree. "It was on account of this resemblance that the young maidens of the Kuravar phratry shouted out 'Tiger, Tiger' when they were plucking the flowers of the venkai tree." This looks almost like a description of a fairly common scene depicted on the Indus seals, where a person is squatting in a tree and extending one of his arms with some object (flower?) in the hand towards a tiger beneath him.

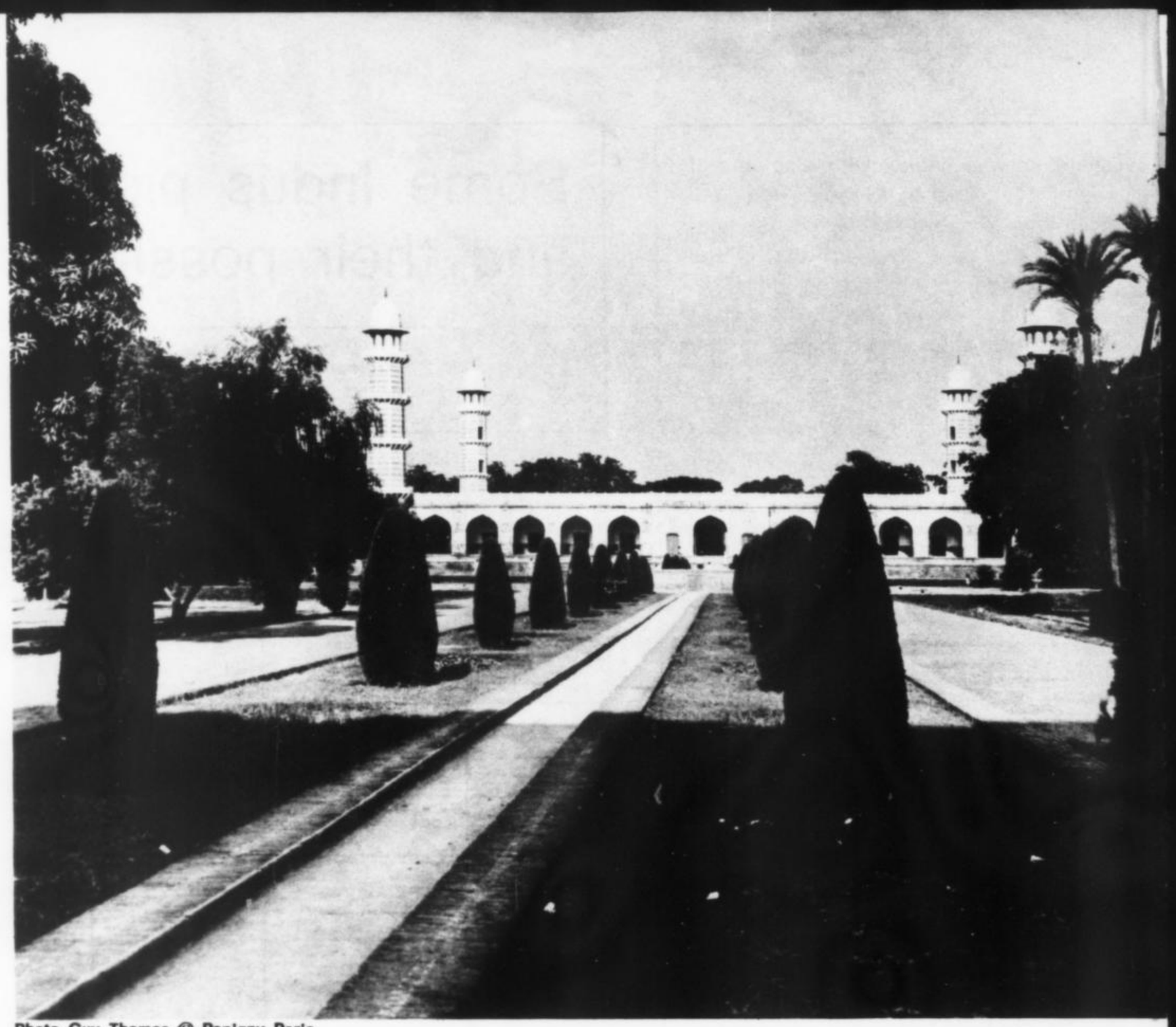
the sign, which was probably associated with some special priestly act depicted on the seal, opposite, showing a female figure with a bull's head and tail and legs, reaching towards a horned tiger. On this seal the text, unfortunately broken, contains the sign with a tail added:

This tail is otherwise known from the sign , a variant of , both of which occur in contexts indicating a meaning "priestess".

If is tampi/nampi (used also as god's epithet like) and is its feminine form, the word is *tankai/nankai* "younger sister; woman of distinction". The tail added to the pictograph of course associates it with the priestess's dress, but also probably has a phonetic value. The word for "tail" in Dravidian is *val*, which has an exact homophone *val* meaning "(ceremonially) pure, white, holy", used with special reference to virgins. In Egyptian the word *w' b* "(ordinary) priest" literally means "pure, clean (person)".

Some Indus pictograms and their possible meanings

Sign	Object depicted	Dravidian name of the object	The homophone intended	Meaning
	ship	ota	utai	" possession ", " own " = genitive suffix (= in Tamil)
	potter's wheel	ali	al	" to rule " " ruler "
	hailstones	ali		
	fish	min	min	" star ", Mars
	roof	mey	mai	" black "
	two previous signs combined		mai-min	" black star " Saturn = Krsna
	flower of the silk-cotton tree	ila	il	" house "
	extended arms, prayer	mana	man	" king "
	drum beaten on one side only	tampata	tampa/i nampi	" priest ", " noble "
	wing	irai	irai	" lord "
	lute lyre	yal	yal	" divine musician ", (Narada)
	wicket in a hedge	katavu	katavul	" god ", " divine "
	seated person	ayya		" father "
	comb	pentika	penti	" woman " " female "
	two signs above combined		amma	" mother " (goddess)
	number one	oru, or		" (one) person "
	scorpion	tel	tel	" bright ", " learned "
	two previous signs combined		tell-or	" learned person "
	man	an		" man ", " servant "
	scorpion and previous sign combined		tell-an	" learned man "



Views of the majestic avenues, ornamental lakes and fountains and pavilions of the Shalamar Gardens, Lahore laid out in the 17th century during the reign of Shah Jahan. In the 18th century the Gardens were despoiled of their marble and other decorations, but under the care of Pakistan's Department of Archaeology and Museums this gem of Moghul landscape architecture is gradually being restored to its former splendour.

Photo Guy Thomas © Papigny Paris

THE GLORY THAT WAS SHALAMAR

Restoring the splendours of Lahore's 17th century garden of delights

by
Muhammad Ishtiaq Khan

"A garden", observed Emperor Babur, founder of the Moghul dynasty, "is the purest of human pleasures". His successors—Humayun, Akbar, Jahangir and Shah Jahan—true to their tradition stinted neither time nor money in satisfying their craving for beauty.

The Shalamar Gardens, laid out near Lahore at the command of Emperor Shah Jahan, express the pure aesthetic taste of Moghul landscape architecture.

They thus embody the Moghul conception of a perfect garden: a deliciously cool and pleasant atmosphere, the murmuring waters of canals, calm mirrored surfaces of ornamental tanks, splashing fountains, rippling and singing cascades and the sombre forms of swaying cypresses.

The name "Shalamar" has been variously interpreted, most popularly of all as "abode of bliss" or "light of the moon". The most plausible interpretation, however, seems to be that the word is a corruption of "Shalimar", from "Shali" (rice paddy) and "Mar" (black loamy soil) in the Kashmiri language.

MUHAMMAD ISHTIAQ KHAN *is General Director of Archaeology and Museums in Pakistan. He has excavated at the 8th-century Arab city of Banbhore near Karachi and other important sites. His main field of study is Islamic archaeology.*

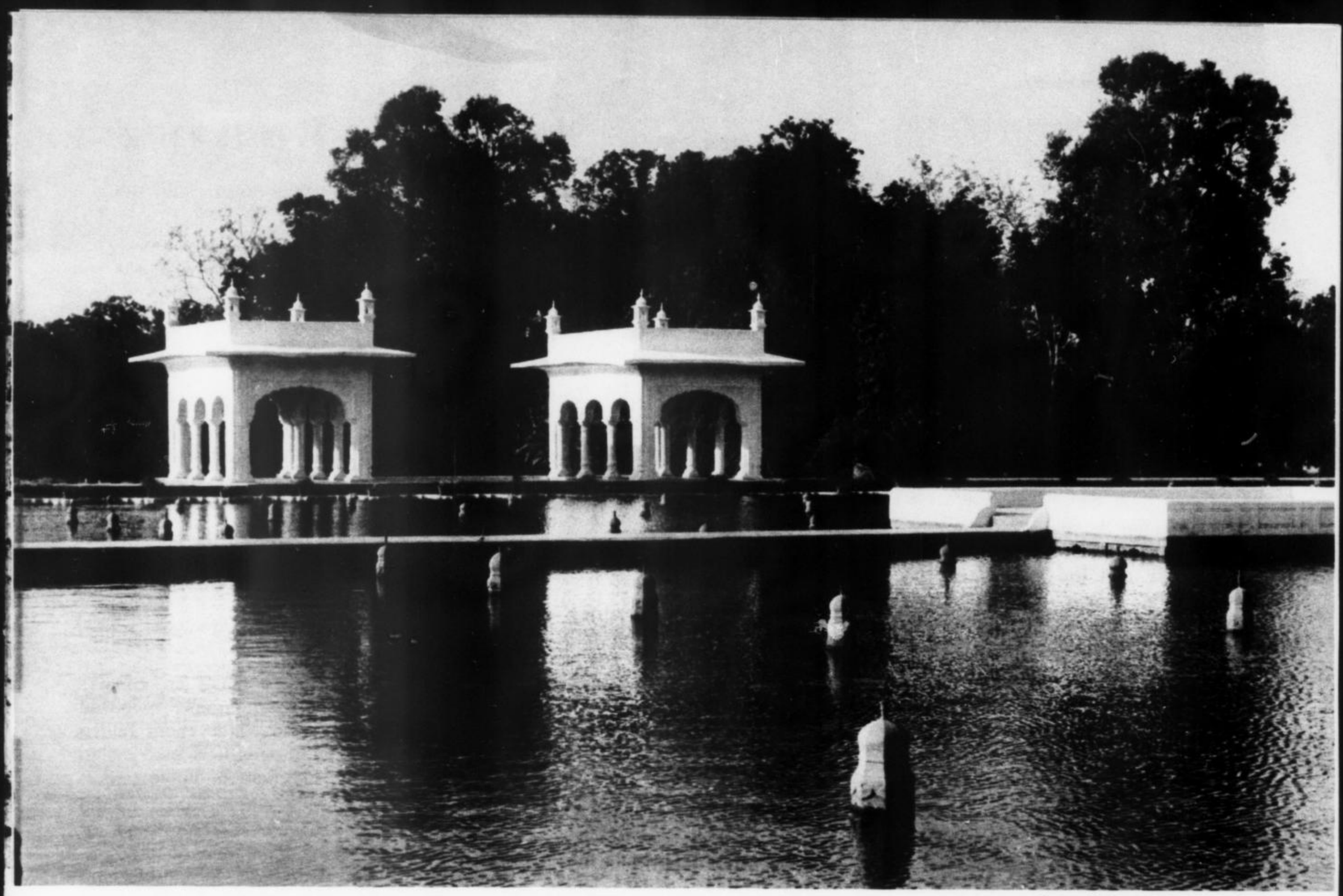


Photo © Vautier Decool, Paris

"Shalimar" therefore meant "black loamy soil for rice-growing". But exactly when the gardens at Lahore came to be given the name Shalamar is not known.

In 1639, Ali Mardan Khan, a Persian noble and Governor of Lahore, informed Emperor Shah Jahan that he could call on the services of expert canal engineers, and sought permission to build a canal from the river Ravi to Lahore.

His request was granted, funds were placed at his disposal and within two years the "Shah Nahar" or Royal Canal was completed with the help of Mulla Alaul Mulk Tuni, an expert in hydrology.

In 1641 Khalilullah Khan, a noble of Shah Jahan's court, was directed by the emperor to select a suitable site on the newly dug canal for laying out a garden. The site he chose was on the old bed of the river Ravi.

On October 31, 1642, exactly one year, five months and four days after the foundations had been laid, the Emperor Shah Jahan paid his first state visit to the completed gardens.

A typical Moghul garden, the Shalamar at Lahore is surrounded by a high battlemented wall, enclosing canals with running waters, large tanks with fountains, rippling cascades, and "Khayabans" or shady promenades. It was laid out in three descending terraces from south to north covering some forty acres. Originally, the terraces were entered through an elegant gateway pierced in the western wall of the lower terrace. In this manner the cascades faced the visitor and new delights were revealed as each terrace was surmounted.

While the upper terrace is nearly 15 ft. higher than the middle terrace, the difference in level between the middle and the lower terrace is only 5 ft. Within the upper and lower terraces, each measuring 290 yds. square, the symmetrical garden plots are divided by intersecting canals into four square parterres. The 20 ft. broad canals are paved and contain rows of fountains in red sandstone and marble. Tanks containing fountains are placed at the intersections of the canals.

The middle terrace measuring 290 yds. by 84 yds. is subdivided lengthwise into three parts. The central part contains the great tank—over two hundred feet across and having more than one hundred fountains—four pavilions and the great cascade. This is the most spectacular feature of the garden. The tinkling music of the fountain jets and their falling sprays resembling masses of diamonds, the rippling and singing cascades and the sweet fragrance of flowers create an atmosphere little short of magical.

The original names of the terraces — "Farah Bakhsh" (Bestower of Pleasure) and "Faiz Bakhsh" (Bestower of Plenty) clearly indicate that while in the upper terrace only flowers and sweet scented shrubs were planted, the middle and lower terraces were reserved for fruit trees. The eastern and western parts of the middle terrace were composed entirely of rosebeds. Cypresses, poplars and chenar trees lined the sides of the "khayabans" or raised brick pavements, transforming them into beautiful shady avenues.

Historians of that time record that within the gardens were planted fruit trees of every season and climate, such as mango, cherry, apricot, peach, apple, almond, quince, seedless mulberry and sweet and bitter orange. Roses, tulips, irises, cyclamen, crown imperials, lilies, pinks, narcissus, jasmine, lilac, lotus and many other flowers bloomed exquisitely.

The canal waters, brought from the river Ravi, entered the gardens from the south, rippled over the great cascade and flowed into the main tank on the middle terrace. After splitting into three cascades, they passed into the lower terrace canals and eventually flowed out of the northern side of the Shalamar Gardens.

"The garden contains so many buildings" wrote a 17th century historian, Muhammad Salih, "that when the Emperor, along with the royal harem, en-

CONTINUED NEXT PAGE

SHALAMAR *(Continued)*

camps there not a single tent need be pitched".

The upper terrace alone has eight buildings, including the royal "Aramgah" (resting place) whose middle room has a beautiful cup-shaped marble basin with a fountain "like a foaming spring". Another building on its eastern side and now known as "Naqqar Khana", or place of fanfare, was originally the "Jharoka-e-Daulat Khana-e-Khas-o-Am" or Balcony of the Hall of Private and Public Audience. On the western side of the terrace is the "Khwabgah" or sleeping chambers of the Empress.

The arcaded building on the northern side, overlooking the great marble cascade and the two lower terraces, is the "Aiwan" or Grand Hall, the walls of which were originally decorated with panelling and frescoes.

Each corner of this terrace is occupied by a "burj" or tower comprising an octagonal chamber surmounted by a red sandstone octagonal pavilion.

In the south-east corner of the middle terrace is the "hamam" or royal bath comprising a "Sard Khana" (cold bath) "Garm Khana" (hot bath) and a large "Rakht Khana" (dressing room). Originally the interior of the bath was decorated with delicate pietra-dura work.

IN THE REALM OF THE GREAT MOGHUL

Chaynes, belles & guilt banners...

For four years, from 1615 to 1619, Sir Thomas Roe diplomat and author, served as English ambassador to the court of the Moghul emperor Jahangir, father of Shah Jahan who built the Shalamar Gardens at Lahore. The journals kept by Sir Thomas and the reports and letters he despatched from the Moghul court are enriched with vivid descriptive accounts and copious details of local customs. Below a short extract from "Embassy of Sir T. Roe to the Court of the Great Moghul" (edited with an introduction by William Foster, London 1899) :

This day was the Birth of the king and solemnized as a great feast... The tyme was spent in bringing of his greatest Eliphantes before him, some of which, beeing Lord Eliphants, had their chaynes, belles, and furniture of Gould and siluer, attended with many guilt banners and flagges, and 8 or 10 Eliphantes wayting on him

On the eastern and western fringes of the great tank are two pavilions originally built in red sandstone but now lime plastered. In the centre of the great tank approached by red sandstone causeways is a raised platform called "Mahtabi" or "of the moon" since it was used for sitting out of doors to enjoy the moonlight.

On the lower terrace is the "Chini-Khana", a three sided "abshar" or waterfall. Its three marble-faced walls have small niches in which golden flower vases were placed in the daytime and camphored wax candles at night.

Since the lamps make an endless chain of light and create coloured reflections on the water sheet falling on the opposite walls it is also called "Dip Mala", or chain of lights.

Facing it is a three-arched ruined pavilion, the "Daulat Khana-e-Khas" or Hall of Private Audience of the Emperor. Its dado was in marble and its walls were originally decorated with frescoes.

The beauty of the garden was en-

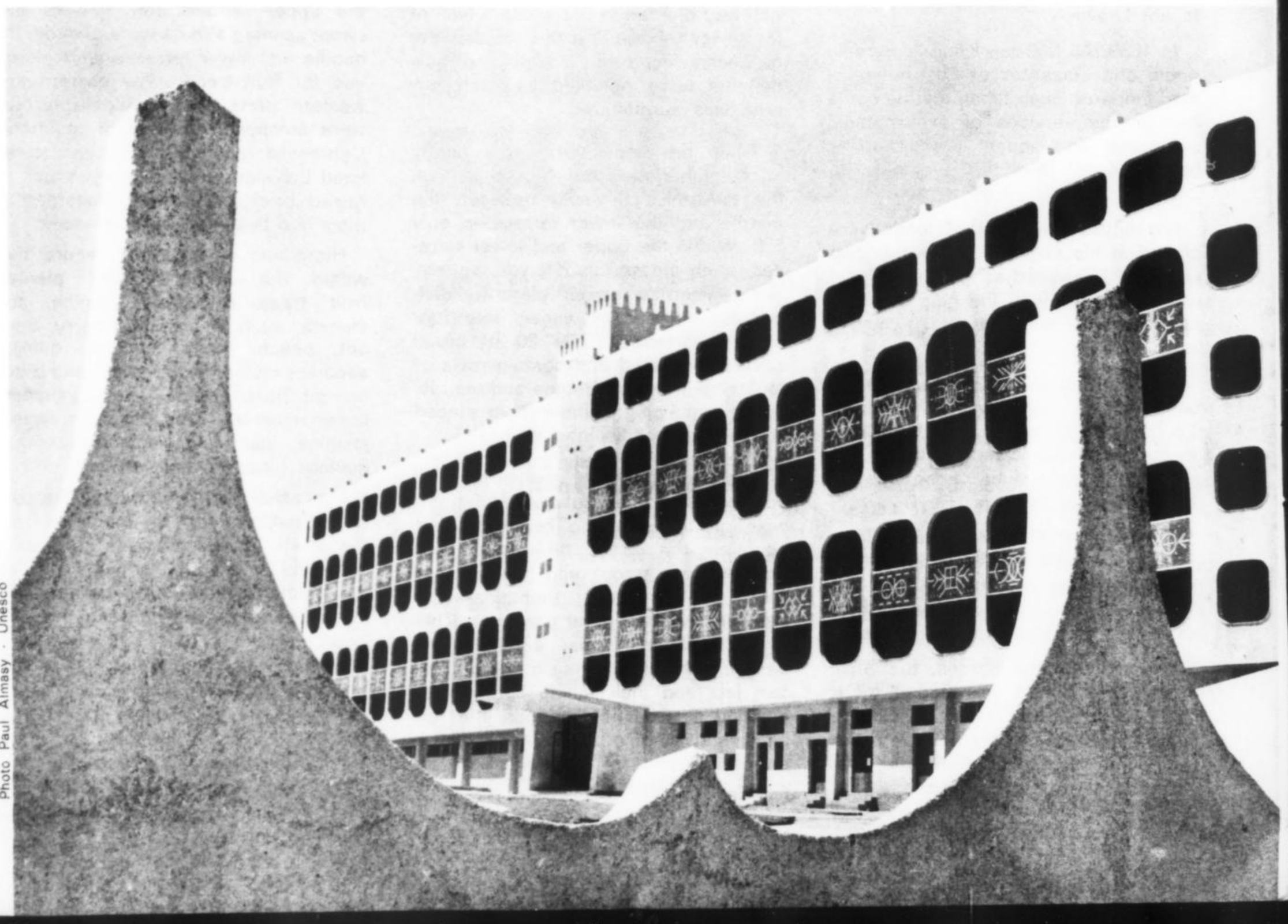


Photo Paul Almasy - Unesco

clothed in gould, silke and siluer. Thus passed about twelve Companyes most richly furnished, the first having all the plates on his head and breast sett with rubyes and emeraldes, beeing a beast of a woonderfull stature and beauty. They all bowed downe before the king, making reuerence very handsomly, and was a showe as woorthy as I euer saw any of beasts only. The keepers of euery Chefe Eliphant gaue a present. So with gratious complements to mee he rose and went in.

Palaces, orchards & bazaars...

The text presented below is taken from the journal of Fray Sebastien Manrique, an Augustinian missionary, entitled: "Itinerary of the missions in Eastern India together with a brief account of the great and wealthy kingdom of the Emperor and Grand Moghul Shah Jahan, and other kings who, during their reign, aided the missionaries of Saint Augustine". During these missions Fray Manrique spent 13 years (1629-1643) travelling throughout the Indo-Pakistan sub-continent. The extract given here is from an English edition of his journal, Volume II, Oxford, 1927.

This city of Laor [Lahore] is the second city of the Moghul Empire, famous both as having been... a place of residence for its monarchs, and also owing to its wealth and grandeur. This is augmented by its being adorned with magnificent Palaces, delightful gardens, and fruitful orchards, full of reservoirs and springs of excellent water. The riches discernible in its main street, or as the inhabitants style it, Bazaar of the Souk, were such as already proved the advantages derived by these regions from the richest and most powerful parts of Europe, especially on this occasion, when the Emperor was present for the feast of the Nauruz [New Year], which that year fell during Ramadan, with its thirty days fast.

joyed by many Moghul rulers, and it was here that the Princess Zebunnisa, talented daughter of Emperor Aurangzeb, moved by the rhythmic sound of the cascade, composed these verses:

"O waterfall! for whose sake art thou [weeping?
In whose sorrowful recollection hast [thou wrinkled thy brows?
What pain was it that impelled thee, [like myself, the whole night
To strike thy head against stone and [to shed tears?"

The gardens were well looked after during the Moghul period but after the collapse of Moghul authority in the Punjab the Shalamar was plundered. A Sikh governor of the province later on undertook to preserve the gardens. He redug the canals and tanks and restored the water supply, stopped all ploughing within the walls and lime plastered the denuded structures. But for his belated patronage the Shalamar Gardens would have disappeared.

Since the gardens were handed over to the Pakistan Department of Archaeology, sustained efforts have been made to preserve the buildings, to restore the gardens to their original appearance and to recreate the former atmosphere.

A phased programme to illuminate the garden has already been initiated and a master plan for its preservation and restoration, costing over $2 million, has been prepared.

The Government of Pakistan has already taken steps to execute this master plan. When completed it will go a long way towards reviving the glory that was Shalamar. ■

Photo N. Serraillier - Unesco

ISLAMABAD modern capital of an ancient land

Since 1961 a great modern city—Pakistan's new capital Islamabad—has risen, Brasilia-like, on the Potwar Plateau between Rawalpindi and ancient Taxilia. Islamabad is a striking achievement of architectural design and town planning. When completed it will have administrative, residential, industrial and business sectors, a diplomatic enclave, a sector for special institutions, a green-belt area and a national park with an Olympic village and zoological and botanical gardens. Designers have incorporated traditional Islamic styles in buildings such as government offices (left) and the imposing hotel on opposite page. In form, as in name, Islamabad harmonizes Pakistan's history and traditions with modernity and innovation.

MOENJODARO
MODERN METROPOLIS OF ANTIQUITY

(Continued from page 13)

Moenjodaro bear pictographic inscriptions which have so far defied all attempts at decipherment. The interpretation of the script is one of the greatest problems of the archaeology of the Indus valley. The writing consists of loops, circles, combs, ladders, spoked wheels and a variety of leaf, fish and other shapes.

Sometimes these symbols appear tantalizingly within grasp, as a former custodian of Moenjodaro narrating a small incident pointed out. He once asked a small boy visiting the Moenjodaro Museum whether he could make out anything from these inscriptions. The boy replied after a moment's thought that these could be the spare parts of a bullock cart!

The Indus valley script consisting of some 250 symbols, excluding variants, is considered to be a pictographic writing, presumably read from right to left and is judged to be a level higher in precision than the hieroglyphic script of Egypt, or the cuneiform script of Mesopotamia.

The signs do not appear to be alphabetic and possibly may represent either syllables, ideograms, or determinatives related to the class of things to which the word belongs.

The script does not show any relation with the ancient writings of the Middle Eastern countries, but it is just possible that its invention was inspired by the example of the cuneiform script of Mesopotamia. At any rate the discussion remains purely academic as long as the script remains undeciphered. (See article page 28.)

MOST common ornaments found at Moenjodaro are necklaces and pendants of semi-precious stones. Decorative faience and paste beads also seem to have been fairly popular. Some cornelian beads etched and marked with designs in white are the same as those found in Mesopotamia and Iran, and they undoubtedly provide evidence of trade relations with the Middle East.

Gold necklaces, armlets, bangles and finger rings were commonly worn by both sexes, while long cornelian beads, ear-rings and anklets were meant for women only. Some of the unusually long cornelian beads indicate advanced techniques of drilling fine and uniform holes through hard substances. A feat of such great skill might have been performed with some delicate drill of high speed.

Among the many implements unearthed at Moenjodaro are stone tools lying alongside copper and bronze tools and utensils. The stone tools are mostly long chert flakes with worn and serrated edges, evidently used as knives for cutting meat and vegetables. Stone vessels are few but there are some alabaster dishes thick and clumsy in appearance.

Almost a complete series of stone weights have also been found which bear a binary ratio. These weights are made of highly polished pieces of chert, quartzite, alabaster, limestone and jasper. Their shapes are cubical, half-cubical, cylindrical and spherical. Very few weights are reported to be defective in measure, a fact which signifies a consistency of commercial standards maintained by the state.

Among the other objects found at Moenjodaro, the gamesmen of carved stones for chess and games of dice are particularly noteworthy. There is also a terracotta saucer with a spiral channel, which is certainly the forerunner of the game of bagatelle. These paraphernalia of indoor recreation indicate that the ancient inhabitants led a life of considerable prosperity and pleasure.

There are some cooking pots, agricultural implements, mirrors, statuettes and ornaments made of copper and bronze. The earthenware objects include a wide range of pottery varying in size from miniature containers for perfumes and cosmetics to large vessels for animal fodder, storing other products, or for sanitary purposes.

The pottery is mostly wheel-turned in plain shapes or with decorations in paints, graffito, etc. The highly specialized character is evident from decorations on the red ware. The patterns consist of geometric shapes, as well as stylized human, animal and bird forms and vegetation. Fish-scale patterns, intersecting circles, pipal leaf motifs and checkerboard designs are fairly common, with some incised and stamped pottery.

The Indus Valley Civilization thus floats within the ken of knowledge quite dramatically and disappears with equal suddenness. Between it and the next important phase in the chronology of the sub-continent there is a wide gap, which it is the hope of archaeologists to fill one day.

Among the causes of the decline and fall of this civilization, scholars enumerate a progressive desiccation of the climate of the Indus valley, devastation by floods, some kind of mysterious epidemic which wiped out the population, and lastly, but strongly emphasized, forays of marauding bands of Aryans, pouring down in waves from the mountain passes in the north and west. Each possibility has its own merits and arguments, but the definitive answer has yet to come.

THE ruins of Moenjodaro, buried beneath the accumulation of thousands of years, remained in an excellent state of preservation. But as soon as they were exposed from oblivion to the incredulous gaze of the 20th century, they were overtaken by the plague of water-logging and the leprosy of salinity. These two diseases combined with the threat of erosion by the Indus river, pose a grim danger to the very existence of one of the most remarkable cultural legacies of the human race.

The present state of the archaeological remains at Moenjodaro has attracted the attention of specialists and laymen alike. It is doubtful if any other country, had it inherited Moenjodaro, would have done more for its preservation than what has been done so far by Pakistan, despite her tight economy.

But saving the ruins of Moenjodaro from total obliteration is not the responsibility of Pakistan alone. It is in fact the combined responsibility of the entire civilized world.

Tangible arrangements to tackle this important task with the help of Unesco are now in the offing and on completion may in themselves be a monument to modern technology and international co-operation. ■

S.M. Ashfaque
and Syed A. Naqvi

Wood engraving by Yuri Kosmynin
after a portrait by M. Abdullayev

NASIMI

poet-philosopher of Azerbaijan

Imadeddin Nasimi's name is famous as one of the great poet-philosophers of the Muslim world. Born in Shemakka, Azerbaijan, 600 years ago, his anniversary has been celebrated in various parts of the world this year. Special international commemorations were held in Baku and Moscow last September organized by the Azerbaijanian Academy of Sciences with the participation of Unesco. "Nasimi's poems", declared the President of the Azerbaijanian S.S.R., Kurban Khalilov, "glorify the beauty and joy of life". All his works "are permeated by this indomitable belief in man and man's ability to develop spiritually and assert himself". "Nasimi", he said, "called on man to reason, fight religious fanaticism and deliver himself from the psychology of slavery. "In the article published here the Soviet writer Vagif Aslanov speaks of the poetry of Nasimi and its meaning in the world of today.

by Vagif Aslanov

IMADEDDIN NASIMI, the great Azerbaijanian poet and an outstanding figure in the poetry and philosophical thought of the Orient was the founder of philosophical poetry in the Azerbaijanian language.

At the time he lived and wrote, at the turn of the fourteenth and fifteenth centuries, religious obscuranticism was dominant and his homeland was ravaged by invasion. Those propagating humanist views, opposing feudal oppression and calling on men to trust in their own powers were punished by death or imprisonment and all non-conformist writings were burned.

His surviving poems show that Nasimi had an encyclopaedic grasp of the learning of his day. He was a propagator and leading theorist of Hurufism, a mystic pantheistic doctrine which emerged in Azerbaijan at the dawn of the fifteenth century. Its name came from the Arab word *huruf*, or letters.

Hurufism deified numerals, letters and the combination of letters in words. It regarded letters as the basis of the whole universe. It believed that all the letters of the alphabet, the whole of Holy Scripture and even God himself were manifest on the face of man. In Nasimi's poems we often find such explicit statements as, *Supreme God is himself humanity's son.* Nasimi says to his reader: *O you in whose face pristine substance is seen, your image is merciful and gracious God.*

Nasimi used the personal pronoun "I" in the generic sense to mean "all men":

Since my ending is eternal and my beginning [primordial,
Primordially and eternally I am the Supreme Being.

He ascribed to man all the epithets of God in the Koran: *The thirty-two immortal letters I am; no mate, no like, no substitute have I.*

The founder of Hurufism was the great Azerbaijanian philosopher Fazlullah Naimi, who set out his doctrine in the treatise entitled *Djavidan-Nama* (The Book of Eternity). Fazlullah Naimi was executed by Tamerlaine's son, Miran Shah in 1394. Nasimi then left Baku and went to Turkey. For spreading Hurufi ideas he was prosecuted and jailed. According to contemporary chronicles, Nasimi spent the last days of his life in the city of Aleppo.

It is recorded that a pupil of his declaimed one of Nasimi's Persian *ghazels* in the street: *To see my face you need an eye that can perceive True God. How can the eye that is short-sighted see the face of God?*

Hearing this heresy religious fanatics arrested the youth and ordered him to name the author of the poem. The youth said it was his own poem and he was promptly sentenced to death. Learning of this, Nasimi went to the place of execution and demanded the innocent youth's release, saying that he himself was the author.

The religious fanatics resolved to flay Nasimi alive. He faced this terrible death with characteristic dignity. During the torture one of the divines present asked Nasimi: "You say you are God. Then why do you grow pale as your blood drains away?" To which Nasimi replied: "I am the sun of love on eternity's horizon. The sun always pales at sundown."

CONTINUED NEXT PAGE

VAGIF ASLANOV *is senior researcher at the Language Institute of the Academy of Sciences of the Azerbaijan Republic, where he heads the Dept. of Comparative Studies of Turk Languages. He recently compiled and commented a two-volume edition of works by Imadeddin Nasimi (published in Baku, capital of Azerbaijan). A one-volume English edition has just been published in Moscow by Progress Publishers.*

Thus Nasimi, whose poems praise truthfulness in man and the nobility and beauty of the human heart and soul, took his place in history as a hero who sacrificed his life for a fellow-man, for the triumph of justice.

In his poems Nasimi summons man to know himself and his own divine nature. He believed that only man can grasp all the secrets of Creation. In oriental mythology the legendary Iranian ruler Djemshid, or Djem, had a cup which, when full of wine, showed all that was happening in the world.

Nasimi often calls human reason the cup of Djemshid. The essence of God is hidden in man, the wine in the chalice of Djem is man. Knowledge and reason are the greatest riches and knowledge gives man strength :

O you who thirst for pearls and gold, for knowledge [strive.
For is not knowledge of man gold and pearls?

And again: *He who masters knowledge, O man, is strong.* The man of reason who is aware of his divine majesty is the most precious being in all Creation: *O you who call a stone and earth a precious pearl, is not man who is so fair and gentle also a pearl?*

MOST religions regard God as the Creator at whose command—"Let there be . . ."—the world was made. Extolling man's beauty and powers, Nasimi regards man as the maker of all things: *Since I am primordial and eternal, I am the Creator and the creature of the universe.*

Nasimi deeply believed that God's command—"Let there be . . ."—was prompted by the power of human speech: *This command by which all things were made possessed the power of our voice and speech.*

While proclaiming man to be God Nasimi does not idealize man and elevate him to Heaven but, on the contrary, placing God within man, he particularly stresses his material origin: *Why are fire and water, earth and air given the name of man?* Entranced by the beauty of man who embraces "the four elements and the six dimensions", the poet exclaims: *Praise him who combines the earth with fire and air, praise the artist who impresses this form upon water!*

In many of his poems he voices the thoughts and sufferings of a man gripped by earthly passion for a woman by whose beauty he is entranced.

Nasimi used poetic forms widespread in the Near and Middle East: the *ghazel* (love poem), *rubai* (quatrain), *qasida* (ode), and *mesnevi* (rhymed couplets), forms of classic Arabic and Persian poetry. His brilliant poems had a decisive influence on the later development of these forms in Turkish poetry.

Ghazels are traditionally love poems about a beautiful woman, about the lover's anguish, the grief of separation and the joys of meeting. Nasimi, however, treats social and philosophical themes in his *ghazels*, which may run to forty or fifty couplets. The distinctive features of his poetry are its combination of lyric verse and philosophical thought, its rich and bold rhythms, harmonies, alliteration and internal rhymes.

Even in his love poems Nasimi boldly opposed religious scholasticism and stated his own philosophy. Comparing his beloved's dark locks to heresy or disbelief and her fair face to belief, he notes how sweetly they live together: *If disbelief is not belief, how did I come to find the light of faith within the circle of your faithless locks?* And again. *I say to him who does not know the secrets of your locks and face, they are the very essence of belief and disbelief.*

Praising nature's charms, man's power and nobility and the grandeur of reason, fostering love of man and setting a high value on human dignity, Nasimi raised to a new height the ideas of humanism in oriental poetry? He strove for man's moral purity, taught norms of humanist morality and called on man to reject duplicity, villainy, ignorance, greed and conceit and to do good deeds and to respect his fellow-men. Nasimi proudly proclaimed: *I have no share in the enslavement of man. God knows I speak the truth.*

Nasimi's poetry affirmed life and urged man to relish all the joys in this world. He categorically rejected the world beyond and considered it Heaven to merge with one's beloved in this world:

Do not thirst for happiness in the world beyond the [grave,
For Paradise and its fair maidens is to meet your [love!

For this reason he reproached the preachers and legislators:

O preacher, do not seek to scare me with tomorrow!
The sage for whom tomorrow comes today, is [unafraid.
Although they promise us God's wine and honey in [Paradise,
It is your lips I need for there I find both honey and [wine...

The freedom and happiness, dignity and majesty of man form the *leitmotif* of Nasimi's poems. Of the grandeur and dignity of man he wrote: *Both worlds within my compass come, but this world cannot compass me.* The poet was in love with the world in which he lived and in which his poetry lives on. Not for one moment did he wish to exchange for Paradise the moments of joy with his beloved in this world:

My rival says: Give me today's love! Take tomorrow [for yourself!
An hour spent with my love for a whole epoch I shall [not exchange.

Nasimi urged people to place no trust in empty promises: *O heart reject vain promises! Let us spend this moment in pleasure! Yesterday has gone, tomorrow is unknown, and so this moment is pleasure.*

NASIMI's poetry is rooted in the social, political and cultural development of the countries of the Near and Middle East, and especially of his homeland of Azerbaijan. It expresses the poet's own extremely complex outlook.

There are occasional notes of pessimism; alongside his faith and confidence in man's might and goodness there are expressions of distrust. Nasimi complains that in this deceitful world there is no true friend and no true love: *Where is the friend who is true to his promise, where the beloved who utters the truth?* In one quatrain he says: *The men of this world have become scorpions and snakes. Evil is widespread throughout the world. Where shall one find a true friend of pure heart? Where is the man of conscience and justice?*

Sometimes he curses the world, observing that unworthy fools hold the reins of government while men of learning and noble ideas have no say. Nevertheless the poet does not lose hope and he trusts that justice will triumph: *O nightingale, do not grieve on parting from the rose! Be patient! Winter shall pass, the garden fill with blossom and spring shall come.*

Many of his verses are aphoristic, expressing moral sentiments and maxims. *Do not grasp the hand of foes, though sweet as honey it may be... How can a man who is corrupt your proper worth assess?... It is hell—with villains to converse.*

Nasimi was fully justified in ranking himself alongside the unsurpassed lyric poets of Persian literature, Salman Saveji and Faridaddin Attar. Valuing riches of the spirit above all else, Nasimi declares: *I am he to whom as servants shahs and sultans come, I am he whose watchman and custodian is the sun.*

Addressing his readers Nasimi declares:

Call me a man who has immortal life,
For I immortal am and ever alive. ■

UNESCO NEWSROOM

BOOKSHELF

PAKISTAN

Unesco collection of representative works

■ **Poems by Faiz**

Faiz Ahmed Faiz. Translated with an introduction and notes by V.G. Kiernan. Contains the Urdu text of each poem with a romanized transliteration and literal prose rendering. Allen & Unwin, London, 1971. 288 pp. (£3.75).

■ **Javid-Nama**

Sir Muhammad Iqbal. Translated from the Persian with introduction and notes by Arthur J. Arberry. Allen & Unwin, London; Hillary House, New York, 1966. 151 pp. ($4.75; £1.35).

■ **Poems from the Divan of Khushal Khan Khattak**

by Khwushhal Khan. Translated from the Pashto by D.N. MacKenzie. Allen & Unwin, London; Hillary House, New York, 1965. 257 pp. ($6.75, £2.10).

■ **The Adventures of Hir & Ranjha**

by Waris Shah. Translated from the Punjabi by Charles Frederick Usborne. Edited with an introduction and notes by Mumtaz Hasan. Peter Owen, London 1973. (£3.25).

■ **The Shore and the Wave**

by Aziz Ahmad. Translated from the Urdu by Ralph Russell. (Unesco Asian Fiction Series.) Allen & Unwin, London (£2.60).

Other Unesco books

■ **The Pakistani Way of Life**

by I.H. Qureshi. (Way of life series) Heinemann, London, 1956.

■ **Compulsory Education in Pakistan**

by Muhammad Shamsul Huq. (Studies on compulsory education). Unesco, Paris, 1954; OP.

■ **Mission on the Teaching of Social Sciences in Pakistan**

by André Bertrand. (Reports and papers in the social sciences). Unesco, Paris, 1955, 40 pp. OP.

20 years of education for world understanding

Unesco's Associated Schools Project, which promotes education for international co-operation and peace in over 900 schools in 62 countries, has just celebrated its 20th anniversary. To mark the occasion, representatives of many of these schools met in Lévis (Quebec) recently to evaluate progress and chart the project's future. While supporting current themes such as the aims and work of the U.N. family of organizations, human rights and studies of other cultures, the conference called for greater emphasis on programmes dealing with development, the environment and community problems.

Unesco-Lebanon centre to study modern man

Unesco and the Lebanese Government are to set up an international centre at Byblos (Lebanon) for the study of modern man and problems of development. Its research will cover education, science, technology, man's relations with his environment, co-existence between peoples of different cultures, languages and social systems, confrontation of ancient and modern civilizations, and the promotion of peace and security.

Restoration aid for Venice

A recently published Unesco booklet describes restoration work undertaken in Venice helped by international efforts to preserve the city's treasures, reports the "Unesco Chronicle" in its October 1973 issue. Over 150 photographs show restoration accomplished with aid from Italy, Australia, France, Fed. Rep. of Germany, Switzerland, U.K. and U.S.A.

Jamaican students launch new quarterly

A group of Jamaican high school students has just launched a quarterly magazine that tells the world about their country's people, culture and crafts. "Peenie Wallie" (a Jamaican name for firefly) is published from Cornwall College, at Montego Bay. Tape recorders and cameras in hand, "Peenie Wallie's" staff seek out people and things that tell the story of Jamaica past and present. They aim to broaden their educational experience while producing a quality magazine.

International Institute for Comparative Music Studies

In our issue "Music of the Centuries" (June 1973, page 23) it was stated that the International Institute for Comparative Music Studies and Documentation was founded in Venice in 1970. In fact it was a branch of the International Institute, under the title "Istituto Internazionale de Musica Comparata", that was set up in Venice in 1970. The Institute itself was established in Berlin in 1963 with Alain Daniélou as Director and has since been financed by the Senate of West Berlin. The Institute edits and produces in Berlin the International Music Council's quarterly, "The World of Music" and prepares the Unesco record collections: "Musical Anthologies of the Orient and Africa", "Musical Sources" and "Musical Atlas".

Flashes...

■ *48 countries have organized campaigns to eradicate malaria; 1,000 million anti-malarial tablets are distributed every year in Africa alone.*

■ *A map of industrial pollution in Great Britain has been published based on nation-wide data gathered by 15,000 youngsters aged 10 to 15.*

■ *The country best suppled with newspapers is Sweden with 534 copies per 1,000 persons, followed by Japan (511 copies) and Iceland (448) reports Unesco's Statistical Yearbook for 1971.*

■ *Analysis of core samples from holes drilled to a depth of 6,200 feet in the Southern Ocean bed suggests that New Zealand drifted away from Australia between 60 million and 80 million years ago.*

■ *World industrial production (mining, manufacturing, electricity and gas) in 1971 increased by 4% over 1970, according to the latest (1972) U.N. Statistical Yearbook.*

U.N. Human Rights anniversary stamp

On December 10, 1948, the United Nations General Assembly adopted and proclaimed the Universal Declaration of Human Rights as "a common standard of achievement for all peoples and all nations". To commemorate the 25th anniversary of the Declaration, the U.N. Postal Administration has just issued the special stamp shown here. Tenth U.N. stamp in the Human Rights series, it is printed in 0.40 and 0.80 Swiss Fr. and 8 and 21 cent denominations. For details of all U.N. stamps write to the Unesco Philatelic Service, Place de Fontenoy, 75700 Paris.

Letters to the Editor

THE SCOURGE OF CHILD LABOUR

Sir,

Your article "40 million child-workers in the world today" (October, 1973) was timely and deals with a deeply disturbing situation. May I take up the question of what is being done, and what should be done, about what you rightly describe as "the scourge of child labour".

The International Labour Office paper (their report IV (1) of 1972) from which you quote has now led to the adoption of a new Convention at the International Labour Conference in June this year. I was able to attend part of the conference as a private individual, and was much moved by the effort of the representatives of governments, employers and trade unions to put together a sound and workable Convention to limit child labour.

But although this Convention sets new standards intended to be of world-wide application, it will only become effective as nations decide to ratify and enforce it. And the very fact that so much exploitation of children takes place in cottage industries, street trades, agriculture, domestic service, and small, non-unionised factories, means that enforcement is quite difficult. It seems likely that even those countries who do ratify the Convention will invoke escape clauses which permit them to exempt from control precisely those occupations where the majority of young children are at work.

So unless ordinary people in all countries take a lively interest in what their own government is doing, in the light of the new Convention, to stop damage to the health and future of children by excessive and unsuitable work, it is unlikely that anything very effective will be done.

May I therefore urge each of your readers to try and get hold of a copy of the new (1973) International Labour Convention on "Minimum Age for Admission to Employment, and in any case to try to persuade the government of his country to help to assure the future health of its citizens by effectively abolishing the use of children in work which damages their health and potential.

Thank you again for drawing attention to this very important problem.

Jim Challis
Canterbury, Kent, U.K.

CHILDREN IN PERIL

Sir,

I have just read "40 million child-workers in the world today" (October 1973 issue). The practices exposed in this article are terrifying—especially when we read of children being employed in the manufacture of fireworks. In France, the employment of children under the age of 18 in the manufacture of fireworks was forbidden by a decree dating back to 1836. The dangers involved with fireworks are in quite a different category to those involved in tasks such as weaving, spinning, sewing, embroidery, metalwork, leatherwork, making carpets, clothing, shoes, toys, etc. To the risk of burns and those from the handling of toxic substances for the children you mentioned as working in glassworks and foundries must be added the serious risk of explosions. I do not recall ever having seen such facts reported in any of the mass media. Thank you for publishing this courageous article which will, I hope, put a stop to this dangerous exploitation of children.

Georges Angeraud
Paris, France

SHALLOW ATTACK ?

Sir,

I have been requested by the committee representing all churches of various denominations in Wootton Bassett to write to you concerning the supplement: "Copernicus as Told to Children" in your April 1973 issue.

The committee are concerned that what appears to be an unbelievably shallow attack on Theology as such supported by various assumptions in the name of science has been published in a magazine such as yours. We believe that such an article can only confuse the minds of children and would not seem to be representative of the many other excellent articles which appear in your magazine.

P.M.O. Giles
Wootton Basset, U.K.

CATCHING UP WITH EVENTS

Sir,

The "Unesco Courier" is indeed a useful magazine. It provides up-to-date and accurate information of world-wide events and developments. It enables people particularly students and teachers to catch up with world events. I especially appreciated your April 1973 issue on Copernicus and its children's story. I am still a student and find it difficult to get your magazine because of foreign currency problems.

Tara Duong Te
Beng Trabek High School
Phnom Penh, Khmer Republic

WORLD'S DEBT TO PASTEUR

Sir,

I was very happy with your issue on Copernicus because it helped me in my studies of international scientific collaboration.

I can only regret that your magazine did not devote a whole issue in 1972 to the commemoration of the 150th anniversary of the great French scientist, Louis Pasteur (1822-1895).

This anniversary was widely marked, especially in France and the Soviet Union. In all major cities of the U.S.S.R. ceremonies were held and a special scientific conference was jointly arranged by the U.S.S.R. Academy of Sciences, Academy of Medical Sciences, Ministry of Public Health and the Gamaleya Institute of Epidemiology and Microbiology.

Pasteur's services to mankind are immense in terms of medical theory, its practical application and (few people are fully aware of this) in promoting intensive co-operation among the world's scientists. What man could not achieve over the centuries to advance all walks of life, wrote the great Russian scientist Kliment A. Timiryazev, Pasteur did in his lifetime.

A. Yefremenko
Gamaleya Institute of Epidemiology and Microbiology
Moscow, U.S.S.R.

BACK TO BOSSUET ?

Sir,

Your number on the origins of man August-September 1972) was an out-(standing achievement. I have since loaned my copy to several friends who have found in the articles answers to many of the questions put to them by their young children on this subject. This first-rate piece of science popularization will help to train young minds to think rationally. I am surprised that the Bernese Monday Group of School Mothers (Letters page, January 1973) should protest against scientific discoveries that are contributing to our knowledge of man as an animal species. Every time fossil discoveries confirm that we belong to the order of primates, going back into the most distant past, must we bring out Bossuet's theory that the world was created in the autumn of the year 4004 A.D. ("Discours sur l'Histoire Universelle"), or quote the first chapters of Genesis to "enlighten" people?

Renée Fournier
Bayonne, France

SOS FROM PLANET EARTH

Sir,

Day after day articles on pollution appear in international publications. It is clear that we, the younger generation, must fight to ensure that our children will enjoy a cleaner world than that in which we live. I would like to appeal to young people the world over to join in an international campaign using letters, telephone calls and other means of communication. Every day we should remind people that planet Earth is making a last cry for help. I think it is up to Unesco to provide young people with the means to carry out such a campaign.

David G. Cross
Palma Soriano, Cuba

SPARK OF LEARNING

Sir,

Your November 1972 issue on the crisis in schools and in education in general deeply impressed me. Resolving this crisis is one of the most urgent tasks for our generation. But one can never overemphasize the vital role in education of individual imagination. Virtually every kind of work calls for imagination and each great discovery is the fruit of an imaginative mind. Yet we still do our best to stifle it in the child, in whom it flourishes so richly. We can never remind parents and teachers of this fact too often.

Peter Schwaninger
Schaffhausen, Switzerland

Imp. GEORGES LANG, PARIS. — Dépôt légal C 1 — décembre 1973 — IMPRIMÉ EN FRANCE (Printed in France)

UNESCO COURIER INDEX 1973

January

ONLY ONE EARTH (B. Ward). World policy for the environment (L. K. Caldwell). The limits to growth (A. Peccei). Limits to the limits to growth (G. Myrdal). Environment and political commitment (Unesco round table). Mediterranean oil pollution (C. Munns). Animal world of Ugo Mochi. Pollution problem No. 1: underdevelopment (J. de Castro). Myth of ecological equilibrium (M. Ozorio de Almeida). Resources of the biosphere (N. Timofeyev-Ressovsky). Art treasures: Persian deity (Iran).

February

SCIENCE AND MYTH (P. Auger). Unesco science prizewinners (D. Behrman). Enigma of the Thracians (M. Stancheva). T.V. via satellite (G. Naesselund). Africa and technology (A. Lankoandé). Americans read more than Europeans (H. Steinberg). Profile of world translations. Art treasures: Lady of Baza (Spain).

March

THREE FACES OF ART (J. Havet). Art in the west (M. Dufrenne). New realism. Art in the socialist countries (B. Köpeczi). Computer art. Art in Asia, Africa and Latin America (M. Dufrenne). Music's new notations. Art treasures: Golden Buddha (Burma).

April

IN THE FOOTSTEPS OF COPERNICUS (J. Bukowski). The foundation of modern science (O. Gingerich). The making of a new universe (O. Pedersen). Special supplement: Copernicus as told to children (J.-C. Pecker). Cultural revolution of the Renaissance (P. Rossi). Copernicus, Galileo and Giordano Bruno (V. Cappelletti). New vision of the universe (R. Maheu). Art treasures: God of the Cyclades (Greece).

May

JIGSAW PUZZLE OF DRUGS. Unesco and the world fight against drugs. Special Unesco inquiry: Education vs. drug abuse; Experiments in six countries; Mass media and the drug question; Harmfulness of cannabis. Don'ts of drug education (G. Birdwood). World drug situation (I. Bayer). Drugs and society (M. Hicter). Art treasures: Mystery sculpture (Mali).

June

MUSIC OF THE CENTURIES (B. Nettl - M. Freedman). Editorial (A. Daniélou). Crisis in Asian music (Tran Van Khê). Beethoven tames the jungle (D. Shostakovitch). Angel of the Maracas (A. Carpentier). Music of India (colour pages). Unesco and music. African music (A. Euba). Music of Tibet (I. Vandor). Delights of music (al-Farabi). Art treasures: Magyar pottery (Hungary).

July

THE THREAT TO PRIVACY. Global U.N. inquiry: Human rights and privacy; Attack on private life; Electronic ears; Hidden eyes; Lawless technology; Techniques for probing the mind; International standards for privacy. World of data surveillance (Unesco study). The ruins of Mari (A. Parrot). Armenia's lost manuscripts (D. Fiks). Art treasures: Regal Amazonian (Brazil).

August-September

METEOROLOGY. Unlocking secrets of tomorrow's weather (K. Langlö). 50 world weather records. Is the climate changing (H. H. Lamb). Scientific armada in the Atlantic (Y. V. Tarbeev). Making the weather pay off (D. Behrman). India's leading research rôle. 8 pages for youngsters: ABC of meteorology; Build your own weather station. Short guide to weather-speak (F. Le Lionnais & R. Clausse). Drought over Africa (J. Dresch). Forecasting drought and floods (J. Namias). Tropical cyclones (P. Rogers). Life-saving hillocks of Bangladesh. Weather lore (R. Clausse). Weather-wise proverbs. Seasons of the Nile (A. El Sawi). Art treasures: Tlaloc, the rain-giver (Mexico).

October

40 MILLION CHILD WORKERS (ILO & Unesco inquiry). Unesco and human rights (P. Juvigny & M.-P. Herzog). Science, society, racism (G. Glezerman). Frobenius and Africa's cultural history (E. Haberland). African art (colour pages). Youth's rights and responsibilities (T. Patrikios). Marriage, majority, vote. Human rights and the postage stamp. Art treasures: Curled up concentration (Indonesia).

November

'PORTUGUESE' AFRICA. Struggle for independence (B. Davidson). U.N. vs. the "last colonial empire". Culture and independence (A. Cabral). Makonde art. U.N. mission to liberated Guinea-Bissau (H. Sevilla Borja). Unesco aid for African liberation movements (G. Fontaine-Eboué). Education in Portuguese territories of Africa (E. de Sousa Ferreira). Colonialism and decolonization (M.H. Aryubi). Art treasures: Lost face from the Chimu (Peru).

December

PAKISTAN: 5,000 YEARS OF ART & CULTURE. Cultural heritage of Pakistan (S. A. Naqvi). Moenjodaro and the Indus Valley Civilization (S. A. Naqvi & S. M. Ashfaque). Preservation of Moenjodaro (H. Daifuku). Arts of the Indus (colour pages). Indus mystery script (A. H. Dani). The Shalamar gardens (I. Khan). Moghul miniatures (M. Hasan). Imadeddin Nasimi, Azerbaijanian poet (V. Aslanov). Art treasures: Hittite sculpture (Turkey).

Where to renew your subscription & order other Unesco publications

Order from any bookseller or write direct to the National Distributor in your country. (See list below; names of distributors in countries not listed, along with subscription rates in local currency, will be supplied on request.)

★

— **AUSTRALIA.** Publications : Educational Supplies Pty. Ltd., P.O. Box 33, Brookvale, 2100, NSW; Periodicals: Dominie Pty. Limited, Box 33, Post Office, Brookvale 2100, NSW. Sub-agent: United Nations Association of Australia, Victorian Division 5th floor, 134/136 Flinders St., Melbourne (Victoria), 3000. — **AUSTRIA.** Verlag Georg Fromme & C°., Arbeitergasse 1-7, 1051, Vienna.—**BELGIUM.** "Unesco Courier" Dutch edition only: N.V. Handelmaatschappij Keesing, Keesinglaan 2-18, 2100 Deurne-Antwerpen. French edition and general Unesco publications agent: Jean de Lannoy, 112, rue du Trône, Brussels 5. CCP 3380.00. — **BURMA.** Trade Corporation N° (9), 550-552 Merchant Street, Rangoon. — **CANADA.** Information Canada, Ottawa, (Ont.). — **CYPRUS.** MAM", Archbishop Makarios 3rd Avenue, P.O. Box 1722, Nicosia. — **CZECHOSLOVAKIA.** S.N.T.L., Spalena 51, Prague 1 (permanent display); Zahranicni literatura, 11 Soukenicka Prague 1. For Slovakia only : Alfa Verlag - Publishers, Hurbanovo nam. 6, 893 31 Bratislava - CSSR. — **DENMARK.** Munksgaards Boghandel, 6, Nörregade, DK-1165, Copenhagen K. — **EGYPT (ARAB REPUBLIC OF).** National Centre for Unesco Publications, N° 1 Talaat Harb Street, Tahrir Square, Cairo; Librairie Kasr El Nil, 38, rue Kasr El Nil, Cairo. — **ETHIOPIA.** National Commission for Unesco, P.O. Box 2996, Addis Ababa. — **FINLAND,** Akateeminen Kirjakauppa, 2 Keskuskatu, Helsinki. — **FRANCE.** Librairie de l'Unesco, 7-9, place de Fontenoy, 75700-Paris, C.C.P. 12598-48. — **GERMAN DEMOCRATIC REP.** Deutscher Buch-Export und Import Gmbh, Leninstrasse 16, 701 Leipzig. — **FED. REP. OF GERMANY** For the Unesco Kurier (German ed. only): Bahrenfelder-Chaussee 160, Hamburg-Bahrenfeld, C.C.P. 276650. For scientific maps only: GEO CENTER D7 Stuttgart 80, Postfach 800830. Other publications: Verlag Dokumentation, Postfach 148, Jaiserstrasse 13, 8023 Munchen-Pullach. — **GHANA.** Presbyterian Bookshop Depot Ltd., P.O. Box 195, Accra; Ghana Book Suppliers Ltd., P.O. Box 7869, Accra; The University Bookshop of Ghana, Accra; The University Bookshop of Cape Coast, The University Bookshop of Legon, P.O. Box 1, Legon. — **GREAT BRITAIN.** See United Kingdom. — **GREECE.** Anglo-Hellenic Agency, 5, Koumpari Street Athens 138; — **HONG-KONG.** Swindon Book Co., 13-15, Lock Road, Kowloon. — **HUNGARY.** Akadémiai Könyvesbolt, Váci u. 22, Budapest V; A.K.V. Könyvtarosok Boltja, Népköztársaság utja 16, Budapest VI. — **ICELAND.** Snaebjörn Jonsson & Co., H.F., Hafnarstraeti 9, Reykjavik. — **INDIA.** Orient Longman Ltd., Nicol Road, Ballard Estate, Bombay 1; 17 Chittaranjan Avenue, Calcutta 13; 36a, Anna Salai, Mount Road, Madras 2; B-3/7 Asaf Ali Road, New Delhi 1; Sub-Depots: Oxford Book & Stationery Co. 17 Park Street, Calcutta 16; and Scindia House, New Delhi; Publications Section, Ministry of Education and Social Welfare, 72 Theatre Communication Building, Connaught Place, New Delhi 1. — **INDONESIA.** Indira P.T., Jl. Dr. Sam Ratulangie 37, Jakarta. — **IRAN.** Kharazmie Publishing and Distribution C°., 229 Daneshgahe Street, Shah Avenue, P.O. Box 14-1486, Teheran. Iranian National Commission for Unesco, Avenue Iranchahr Chomali No 300, B.P. 1533, Teheran. — **IRAQ.** McKenzie's Bookshop, Al-Rashid Street, Baghdad; University Bookstore, University of Baghdad, P.O. Box 75, Baghdad. — **IRELAND.** The National Press, 2, Wellington Road, Ballsbridge, Dublin 4. — **ISRAEL.** Emanuel Brown, formerly Blumstein's Bookstores, 35 Allenby Road and 48, Nachlat Benjamin Street, Tel-Aviv; 9, Shlomzion Hamalka Street Jerusalem. — **JAMAICA.** Sangster's Book Stores Ltd., P.O. Box 366, 101 Water Lane, Kingston. — **JAPAN.** Maruzen Co. Ltd., P.O. Box 5050, Tokyo International 100-31. — **KENYA.** The E.S.A. Ltd., P.O. Box 30167, Nairobi. — **KOREA.** Korean National Commission for Unesco, P.O. Box Central 64, Seoul. — **KUWAIT.** The Kuwait Bookshop Co., Ltd., P.O. Box 2942, Kuwait. — **LIBERIA.** Cole and Yancy Bookshops Ltd., P.O. Box 286, Monrovia. — **LIBYA.** Agency for Development of Publication & Distribution, P.O. Box 34-35, Tripoli. — **LUXEMBOURG.** Librairie Paul Bruck, 22, Grand-Rue, Luxembourg. — **MALAYSIA.** Federal Publications Sdn. Bhd., Balai Berita, 31, Jalan Riong, Kuala Lumpur. — **MALTA.** Sapienza's Library, 26 Kingsway, Valletta. — **MAURITIUS.** Nalanda Company Ltd., 30, Bourbon Street, Port-Louis. — **MONACO.** British Library, 30, Bld des Moulins, Monte-Carlo. — **NETHERLANDS.** For the « Unesco Koerier » Dutch edition only : Systemen Keesing, Ruysdaelstraat 71-75, Amsterdam-1007. Agent for all Unesco publications : N. V. Martinus Nijhoff, Lange Voorhout, 9, The Hague. — **NETHERLANDS ANTILLES.** G. C. T. Van Dorp & Co. (Ned Ant.). N.V., Willemstad, Curaçao. N. A. — **NEW ZEALAND.** Government Printing Office, Government Bookshops at : Rutland Street, P.O. Box 5344, Auckland; 130, Oxford Terrace, P.O. Box 1721, Christchurch; Alma Street, P.O. Box 857, Hamilton; Princes Street, P.O. Box 1104, Dunedin; Mulgrave Street, Private Bag, Wellington. — **NIGERIA** The University Bookshop of Ife, The University Bookshop of Ibadan, P.O. Box 286; The University Bookshop of Nsukka; The University Bookshop of Lagos; The Ahmadu Bello University Bookshop of Zaria. — **NORWAY.** All publications : Johan Grundt Tanum (Booksellers) Karl Johans gate 41/43, Oslo 1. For Unesco Courier only: A.S. Narvesens Litteraturtjeneste, Box 6125, Oslo 6. — **PAKISTAN.** The West-Pak Publishing Co. Ltd., Unesco Publications House, P.O. Box 374 G.P.O., Lahore; Showrooms: Urdu Bazaar, Lahore, and 57-58 Murree Highway, G/6-1, Islamabad. Pakistan Publications Bookshop, Sarwar Road, Rawalpindi. Mirza Book Agency 65 Shahrah Quaid-e-azam, P.O. Box N° 729, Lahore-3 — **PHILIPPINES.** The Modern Book Co., 926 Rizal Avenue, P.O. Box 632, Manila D-404. — **POLAND.** All publications : ORWN PAN Palac Kultury i Nauki, Warsaw. For the Unesco Courier only : RUCH, ul. Wronia, 23, Warsaw 10. — **PORTUGAL.** Dias & Andrade Ltda, Livraria Portugal, rua do Carmo 70, Lisbon. — **SINGAPORE.** Federal Publications Sdn Bhd., Times House, River Valley Road, Singapore 9. — **SOUTHERN RHODESIA.** Textbook Sales (PVT) Ltd., 67 Union Avenue, Salisbury. — **SRI LANKA.** Lake House Bookshop, 100 Sir Chittampalam Gardiner Mawata P.O.B. 244 Colombo 2. — **SUDAN.** Al Bashir Bookshop, P.O. Box 1118, Khartoum. — **SWEDEN.** All publications: A/B C.E. Fritzes Kungl. Hovbokhandel, Fredsgatan 2, Box 16356, 10327 Stockholm 16. For the Unesco Courier: Svenska FN-Förbundet, Skolgränd 2, Box 150 50 S- 104 65, Stockholm. — **SWITZERLAND.** All publications : Europa Verlag, 5 Ramistrasse, Zurich. Librairie Payot, rue Grenus 6, 1211, Geneva 11, C.C.P. 12-236. — **TANZANIA.** Dar-es-Salaam Bookshop, P.O.B. 9030 Dar-es-Salaam. — **THAILAND.** Suksapan Panit, Mansion 9, Rajdamnern Avenue, Bangkok. — **TURKEY.** Librairie Hachette, 469 Istiklal Caddesi, Beyoglu, Istanbul. — **UGANDA.** Uganda Bookshop, P.O. Box 145, Kampala. — **SOUTH AFRICA.** All publications: Van Schaik's Bookstore (Pty). Ltd., Libri Building, Church Street, P.O. Box 724, Pretoria. For the Unesco Courier (single copies) only: Central News Agency P.O. Box 1033, Johannesburg. **UNITED KINGDOM.** H.M. Stationery Office, P.O. Box 569, London, S.E.I., and Government Bookshops in London, Edinburgh, Cardiff, Belfast, Manchester, Birmingham, Bristol. — **UNITED STATES.** Unesco Publications Center, P.O. Box 433, New York, N.Y. 10016. — **U.S.S.R.** Mezhdunarodnaja Kniga, Moscow, G-200. — **YUGOSLAVIA.** Jugoslovensita Knjiga, Terazije, 27, Belgrade; Drzavna Zalozba Slovenije Mestni Trg. 26, Ljubljana.

The seals of the Indus Valley Civilization of Moenjodaro, engraved 4,500 years ago, carry mysterious inscriptions that scholars are still trying to decipher (see article page 28). The three seals alongside are presented in two forms: left, the actual seal with hollowed-out animal figure and script; right, the impression made by the same seal. For a curious optical effect turn the page upside down and the hollowed-out figures will appear in relief and vice-versa.

Photos Department
of Archaeology
and Museums, Pakistan

Mystery script of Moenjodaro